

**BY ORDER OF THE COMMANDER  
AIR FORCE TEST CENTER**

**AIR FORCE TEST CENTER INSTRUCTION  
91-203**



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**Safety**

**AFTC TEST SAFETY REVIEW POLICY**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This publication implements Air Force Instruction (AFI) 91-202 Air Force Materiel Command (AFMC) Supplement. This publication provides further policy and guidance to Chapter 13. It directs the application of system safety principles to the planning and conduct of all Air Force Test Center (AFTC) and other designated AFMC test programs (reference paragraph 1.5) regardless of the agency conducting the tests. It also provides guidance for the application of system safety principles to AFTC training programs, logistics testing, and publications. Organizations within AFTC will supplement this instruction to provide a detailed local test safety review process. Draft supplements must be submitted to AFTC/SE for coordination and TW or Complex Commander for approval. Attachment 1 lists abbreviations and acronyms used in this instruction. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command. The authority to waive wing/unit level requirements in this publication is Tier 3. See AFI 33-360, *Publications and Forms Management*, Table 1.1 for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the Publication OPR for non-

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**(EDWARDSAFB)** This publication supplements Air Force Test Center (AFTC) Instruction 91-203, *AFTC Test Safety Review Policy*. It provides further policy and guidance on the 412th Test Wing (412 TW) Test Safety Review Process and applies to all Edwards Air Force Base units involved in the Test Safety process. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). See Attachment 1 for a glossary of references and supporting information. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command. See paragraph 1.7.2. for waiver request routing procedures. This publication may be supplemented at any level, but all direct Supplements must be routed to the OPR of this publication for coordination prior to certification and approval. This instruction does not require tiers at or below the Wing level.

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## Chapter 1

### INTRODUCTION

**1.1. General.** The intent of this instruction is to establish a framework and basic requirements for AFTC test safety programs. This instruction further establishes basic vocabulary and definitions to be used universally throughout AFTC. Within the framework of this instruction, wings or their equivalent are expected to develop processes to fulfill the requirements of this instruction.

**1.2. Test Safety Review Process.** A Test Safety Review Process typically comprises the following functions or phases: Planning (Chapter 4), Review (Chapter 5), Coordination and Approval (Chapter 6), Execution (Chapter 7), Revisions (Chapter 8), Feedback, and Test Completion and Termination. This instruction provides overall policy and guidance for test safety activity to ensure standardization of AFTC organizations while adhering to Air Force Instructions and Air Force Material Command Supplements. Organizations within AFTC will supplement this instruction to provide further test safety process details that uniquely apply to their specific test safety requirements.

1.2.1. **(Added-EDWARDSAFB)** Figure 1.1 is a flow diagram of the 412 TW Test Safety Review Process, which consists of three distinct phases: safety planning, final safety review and approval. The overall process begins when the test organization receives the customer's test requirements and begins technical planning.

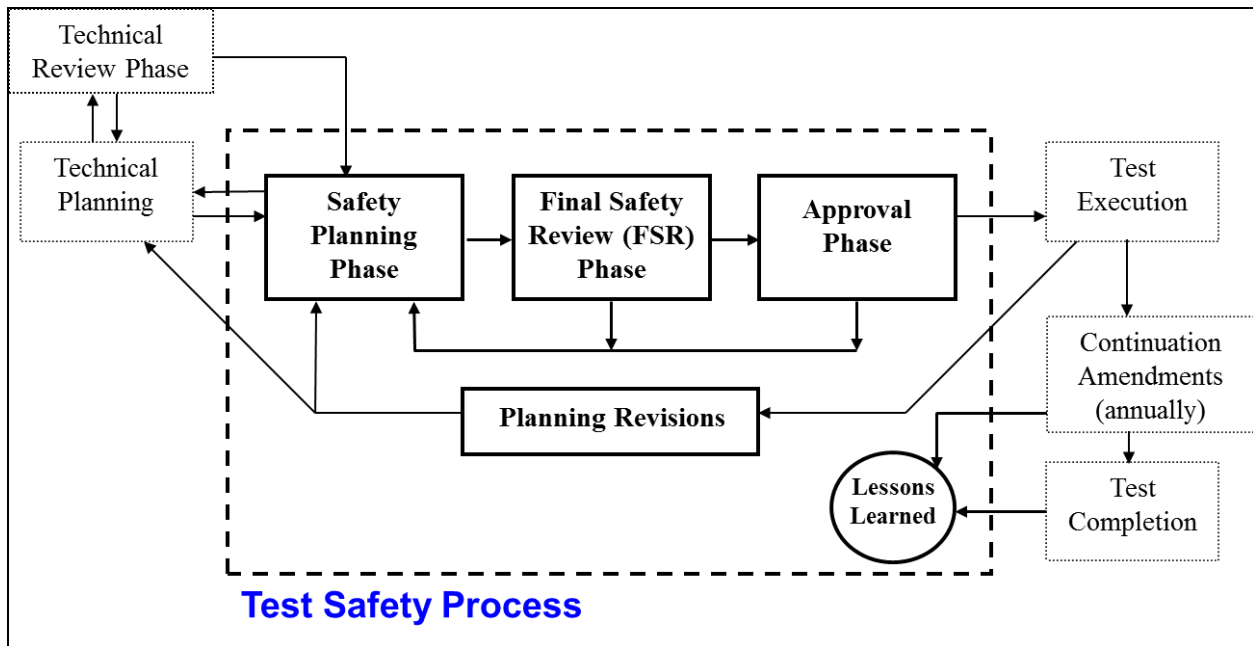
1.2.2. **(Added-EDWARDSAFB)** The goal of the Safety Planning Phase is to produce a robust and high quality safety plan that identifies all the test unique hazards with sufficient controls (within program constraints) to support test approval in a timely manner. Chapter 4 discusses the requirements of the Safety Planning Phase.

1.2.3. **(Added-EDWARDSAFB)** The Final Safety Review Phase comprises a safety review and risk assessment of the finalized test safety planning by a panel of independent operational and technical experts and is described in Attachment 5. Additional guidance is provided in Attachments 6, 7 and 8 for each type of safety review; Safety Review Board, Electronic Safety Review and Negligible Risk Review.

1.2.4. **(Added-EDWARDSAFB)** The Approval Phase requires that the test package be coordinated and approved by senior leadership prior to execution. Chapter 6 outlines the approval process.

1.2.5. **(Added-EDWARDSAFB)** During test execution, changes to test requirements, unusual test events or ineffective or overly restrictive safety planning may require revisions to test and/or safety plans. These revisions will be considered using the test safety review process. Attachment 9 provides details for revising test and/or safety plans.

1.2.6. **(Added-EDWARDSAFB)** When the test program is complete, the test team will close the test package and record lessons learned for other test programs to consider. Closeout and lessons learned documentation requirements are included in Attachment 4.

**Figure 1.1. (Added-EDWARDSAFB) Test Safety Review Process**

**1.3. Safety Review Process Goals.** The goal of any test safety review process is to prevent mishaps during test activities. This process should identify test hazards and establish both procedures and corrective actions to eliminate or control the hazards. The process will allow independent reviewers to evaluate test unique hazards identified by the test team, assess proposed mitigations and corrective actions, and affirm the test team's proposed overall risk level. Once the independent review board has agreed upon and proposed an overall risk level, the safety plan is reviewed and approved by leadership at a level appropriate for the assessed risk.

#### **1.4. Risk Management**

1.4.1. Risk Management is the main tool used to prevent mishaps and is the essence of any test safety review process within AFTC. While each test may be unique, the test safety review process for each test will follow a predictable, consistent process. The policy outlined in this instruction and the processes defined in local supplements are tailored to manage risk unique to test activity.

1.4.2. At the discretion of subordinate units, the policy defined in this instruction and local supplement may be used to complete and approve a Risk Management review of non-test activities.

**1.5. Safety Mindset.** While test safety processes should be intentionally thorough, no process is perfect. Everyone involved in test must maintain a safety mindset. A safety mindset does not assume that a test is safe simply because the test has been reviewed and approved; rather, it is continually on the lookout for previously unrecognized hazards during test planning and execution. Once recognized, appropriate actions must be taken to prevent those hazards from becoming mishaps.

**1.6. Scope.** This instruction applies to:

1.6.1. Any ground or flight test activity utilizing AFTC assets. AFTC assets include:

1.6.1.1. Resources owned or possessed by AFTC (personnel, aircraft, equipment, facilities, etc.).

1.6.1.2. Ranges or airspace owned or restricted for use by AFTC units.

1.6.2. Any activity where the AFTC/CC or subordinate commander has responsibility for the safety of the general public as the Major Range and Test Facility Base Commander IAW DoD 3200.11.

1.6.3. Any activity utilizing AFTC assets that presents unique hazards not covered by published procedures or management directives.

1.6.4. AFMC assets when AFTC units are assigned as Lead Developmental Test Organization (LDTO).

1.6.5. Any AFTC unit assigned or acting in the capacity of an LDTO that is responsible for the safe conduct of test, even when AFTC assets are not at risk.

1.6.6. Any activities specified by the subordinate unit Test Safety Office.

1.6.6.1. **(Added-EDWARDSAFB)** Any air show or aerial demonstration conducted using 412 TW aircrew or assets.

1.6.6.2. **(Added-EDWARDSAFB)** 412 TW developed flight training activities, including USAF Test Pilot School (TPS) curriculum activities. See A10.3 for TPS special procedures.

**1.7. Waivers.** The AFTC Commander is the waiver authority for this instruction. Guidance in AFI 91-202, AFMC Sup Chapter 13 would still apply unless waived separately. The AFTC Chief of Safety (AFTC/SE) may approve minor variations from this instruction provided that the intent of the test safety process and this instruction are adequately met. Any variations or waivers approved by AFTC will be documented in an MFR and included in the Safety Annex to the Test Plan.

1.7.1. **(Added-EDWARDSAFB)** 412 TW Test Safety Office (412 TW/SET) may approve minor variations from this supplement provided that the intent of the test safety process and this supplement are adequately met.

1.7.2. **(Added-EDWARDSAFB)** To submit a waiver for AFTCI 91-203, route the request to Air Force Test Center Safety Office (AFTC/SE) through 412 TW Safety Office (412 TW/SE) and 412 TW/SET.

**1.8. Authority.** Compliance with AFTC Test Safety Review Policy does not provide authority to violate Air Force, AFMC, or AFTC instructions or directives.

1.8.1. When a test activity must deviate from an AFI or other command directive, units will comply with the applicable waivers/deviations process outlined in the applicable document. A copy of the waiver will be filed in the Safety Annex. If the waiver authority is within the local Wing or Complex chain of command, the waiver may be obtained during the approval cycle and documented as a coordination comment within the Safety Annex.

1.8.2. When a test activity must deviate from a technical order or flight manual, units will follow current command guidance. If a waiver is required, a copy of the approved waiver

will be filed in the Safety Annex. Test teams will note the deviation in the test plan and incorporate safety planning as required.



## Chapter 2

### SAFETY RESPONSIBILITIES

#### 2.1. Test Approval and Coordination Responsibilities

2.1.1. Responsibilities of personnel/organizations involved in the test safety approval and coordination phase are as follows:

2.1.2. The AFTC/CC will:

2.1.2.1. Be the approval authority for this instruction.

2.1.2.2. Be the waiver authority for this instruction.

2.1.3. AFTC/SE will:

2.1.3.1. Establish test safety review policy for all AFTC organizations.

2.1.3.2. Review local supplements to this instruction.

2.1.3.3. Approve minor variations from this instruction that meet the intent of the test safety process and this instruction.

2.1.4. AFTC Test Safety Office will:

2.1.4.1. Organize an annual test safety process meeting with all AFTC organizations to review local test safety process best practices.

2.1.4.2. Assess compliance of AFTC organizations with this instruction when conducting inspections in accordance with AFI 91-202.

2.1.4.3. Approve locally developed Test/System Safety training courses.

2.1.5. Wing or Complex Commander will: Approve local supplements to this instruction.

2.1.6. Wing or Complex Test Safety Office (or SE delegate if none exists) will:

2.1.6.1. Develop a local test safety review process as a supplement to this instruction.

2.1.6.2. Maintain the integrity of locally developed test safety review process to ensure independent government review of safety planning documentation is being accomplished for leadership approval decisions.

2.1.6.3. Provide initial and annually recurring test safety review process training for Wing/Complex/Unit personnel (including contractor personnel as appropriate) who are involved in test safety planning.

2.1.6.4. Incorporate lessons learned and best practices into appropriate training programs and provide for discussion during AFTC's annual test safety process meeting.

2.1.6.5. Provide guidance and assistance to test unit personnel on test safety planning.

2.1.6.5.1. **(Added-EDWARDSAFB)** Provide updated information on safety documentation preparation, recent unusual test events, unidentified hazards, lessons learned or other information deemed appropriate by the Chief of Test Safety for

distribution to all Unit Test Safety Officers (UTSOs). This information should be posted on the 412 TW/SET SharePoint site or distributed via other appropriate means.

2.1.6.6. Designate or act as the Safety Review Board (SRB) chairperson (if required).

2.1.6.7. Approve independent safety reviewers chosen by test teams in accordance with **Section 2.3.**

2.1.6.8. Notify HQ AFMC/SE/A3 and asset owner of high risk tests, IAW AFI 91-202\_AFMCSUP.

2.1.6.9. Ensure an archive of approved test packages and associated documentation is maintained and available to test teams.

2.1.6.10. **(Added-EDWARDSAFB)** Manage the UTSO program.

2.1.6.11. **(Added-EDWARDSAFB)** Provide safety planning advice to non-412 TW test agencies.

2.1.6.12. **(Added-EDWARDSAFB)** Maintain this supplement. Solicit lessons learned so they may be incorporated into future safety planning.

2.1.6.13. **(Added-EDWARDSAFB)** If HIGH risk test execution authority (TEA) is delegated to 412 TW/CC, notify AFTC/SET upon approval of HIGH risk test packages.

2.1.7. **(Added-EDWARDSAFB)** 412 TW/SE will:

2.1.7.1. **(Added-EDWARDSAFB)** Approve minor variations from this instruction supplement that meet the intent of the test safety process and this instruction supplement.

## **2.2. Test Unit Safety Planning Responsibilities**

2.2.1. Responsibilities of personnel within a test unit during the test safety planning and review phase are as follows:

2.2.2. Squadron Commanders (Test Unit Commander, Director or equivalent) will:

2.2.2.1. Review and provide coordination for all test and safety plans within their organization.

2.2.2.2. Approve Low Risk test activities as delegated by Group CC (or equivalent).

2.2.2.3. Approve Negligible Risk test activities if applicable per local supplement to this instruction.

2.2.2.4. Ensure all unit personnel involved in safety planning or execution are familiar and comply with this instruction and local supplements and receive initial and annual test safety training.

2.2.2.5. Support the AFTC test safety process, which may include operations and/or technical personnel assigned to their test unit participating in independent review of other test programs or activities.

2.2.2.6. **(Added-EDWARDSAFB)** Appoint the best qualified personnel as UTSOs and ensure their availability to assist project personnel with test safety planning.

2.2.2.7. **(Added-EDWARDSAFB)** Ensure UTSOs and project safety leads (PSLs) receive annual continuation training provided by 412 TW/SET.

2.2.3. Safety plan authors will:

- 2.2.3.1. Complete a locally developed Test/System Safety training course offered by the Wing/Complex Test Safety Office and approved by AFTC/SET.
- 2.2.3.2. Maintain currency by completing continuation training annually.
- 2.2.3.3. Develop safety plans in accordance with **Chapter 4** of this Instruction and local supplements.
- 2.2.3.4. Ensure drafted safety plans clearly and adequately provide enough information to support an approval decision.
- 2.2.3.5. Identify a proposed final project risk level to the independent reviewers.
- 2.2.3.6. **(Added-EDWARDSAFB)** Note: PSLs will serve as safety plan authors.

2.2.4. Test Team will:

- 2.2.4.1. Determine if test methods, conditions, and resources in test methodology balance safety and data needs.
- 2.2.4.2. Ensure all appropriate test techniques were considered. Choose the lowest risk technique which efficiently meets test/data objectives.
- 2.2.4.3. Ensure appropriate test unique hazards related to test methods and system(s) operation are identified and sufficiently controlled (eliminated, mitigated, or residual risk determined to be acceptable).
- 2.2.4.4. Ensure tests are being conducted per published technical orders and Air Force Instruction guidance, or waivers are submitted/approved.
- 2.2.4.5. **(Added-EDWARDSAFB)** Identify a safety plan author, the PSL, who will be the focal point for all safety planning development for that test. This person, together with the UTSO, will verify that the planning is being prepared according to this instruction.

2.2.4.5.1. **(Added-EDWARDSAFB)** Qualifications for the PSL are:

2.2.4.5.1.1. **(Added-EDWARDSAFB)** An engineer with test experience who is familiar with the system under test (SUT) and has been involved in the test plan development. In cases where an external customer accomplishes test planning without 412 TW involvement, the PSL needs to be familiar with the proposed test events, the items(s) under test, test platform, system maturity and 412 TW assets involved.

2.2.4.5.1.2. **(Added-EDWARDSAFB)** Completion of a 412 TW/SET Initial Test System Safety training course.

2.2.4.5.1.3. **(Added-EDWARDSAFB)** Maintaining currency by attending continuation training annually.

2.2.4.5.2. **(Added-EDWARDSAFB)** Qualifications for the UTSO are in Attachment 11.

2.2.4.5.3. **(Added-EDWARDSAFB)** Qualifications for either the PSL or UTSO can be amended or removed with 412 TW Chief of Test Safety approval.

### 2.3. Independent Safety Reviewer Responsibilities

2.3.1. Independent Safety Reviewers must be independent of the test program and should have appropriate qualifications; be senior in test experience or have formal Test Pilot School training; and have sufficient expertise in the test activity to be reviewed. To the maximum extent possible, independent safety reviewers should be the same individuals that served as independent reviewers for the technical review (if applicable). For an SRB, minimal membership includes Chief of Test Safety Office or designee as the SRB chairperson plus technical, operations, test facility and maintenance reviewers (as required). The SRB chairperson must be independent of the test program and a government employee. Senior leaders (Squadron Commander or above) satisfy this requirement. Independent reviewers will be approved by the Wing or Complex Test Safety Office in accordance with qualification guidelines set forth in local supplements to this instruction. Individual reviewer responsibilities are as follows:

2.3.2. SRB Chairperson will:

2.3.2.1. Ensure appropriate test unique hazards are identified and sufficiently controlled (eliminated, mitigated, or residual risk determined to be acceptable).

2.3.2.2. Ensure general and special mitigation procedures are clear and unambiguous.

2.3.2.3. Ensure the safety assessment is clearly and concisely articulated to approval authorities.

2.3.3. Technical Reviewer will: Ensure technical safety hazards are identified and appropriately controlled (eliminated, mitigated, or residual risk determined to be acceptable).

2.3.4. Operations Reviewer will:

2.3.4.1. Ensure tests are executable, all test techniques were considered, and lowest risk technique which efficiently meets test/data objectives was selected.

2.3.4.2. Ensure hazards related to operating the system are identified and appropriately controlled (eliminated, mitigated, or residual risk determined to be acceptable).

2.3.5. Facility Reviewer (if required) will: Ensure hazards related to operating and maintaining facility-based test systems are identified and appropriately controlled.

2.3.6. Maintenance Reviewer (if required) will: Ensure test conduct and execution does not deviate from test article maintenance procedures or technical manuals.

2.3.7. Optional Reviewers, as deemed necessary by the SRB chair, may include but are not limited to:

2.3.7.1. Range Safety/Range Operations Engineer

2.3.7.2. Flight Safety Representative

2.3.7.3. Test Engineer

2.3.7.4. System Safety Engineer

2.3.7.5. Ground Safety Representative

2.3.7.6. Weapons Safety Representative

- 2.3.7.7. EOD Representative
- 2.3.7.8. Test Requestor / Item Contractor
- 2.3.7.9. Airspace Representative
- 2.3.7.10. Logistics Representative
- 2.3.7.11. Munitions Representative
- 2.3.7.12. Fire Department Representative
- 2.3.7.13. Bioenvironmental Engineer
- 2.3.7.14. Medical Representative
- 2.3.7.15. Environmental Management Office Representative
- 2.3.7.16. Range O&M Representative
- 2.3.7.17. Laser or Directed Energy Safety Representative
- 2.3.7.18. Flight Termination System Analyst

## Chapter 3

### RISK ASSESSMENT

**3.1. General.** Risk is defined as a combination of mishap severity and mishap probability. The overall risk level is the degree of risk assumed by leadership in allowing the proposed test to be accomplished in the manner described and under the conditions specified. Test teams will assess risk; independent reviewers will evaluate test unique hazards identified by the test team, assess proposed mitigations and corrective actions, and affirm the test team's proposed overall risk level. Once the independent review board has agreed upon a risk level, they will make a recommendation for a final risk level to the Test Execution Authority (TEA) as outlined in [Chapter 6](#). Test teams use system safety techniques, prior experience, legacy system research, and overall engineering judgment to identify test hazards and assess risk by evaluating the credible outcome (mishap severity) of each hazard together with the associated probability of occurrence. The mishap severity and probability is then plotted on a Risk Assessment Matrix to determine the hazard's overall risk level. Although the goal is to minimize risk through good test and safety planning/review processes, the test may result in residual risk that must be directly accepted by the TEA in accordance with [Section 6.1](#).

**3.2. Determine Mishap Severity.** The mishap severity category is a qualitative assessment of the most reasonable credible mishap consequence that could occur with all mitigation in place. For activities at AFTC organizations, the mishap severity categories are shown in [Table 3.1](#). The assessment should incorporate engineering judgment and/or past experience with similar tests or systems with all minimizing procedures and corrective actions in place. Descriptive definitions should be used as the primary criteria for assessing mishap severity. However, quantitative values may be used for higher cost test articles. Quantitative values for mishap severity listed in [Table 3.1](#) may be adjusted to match current guidance specified in AFI91-204, *Safety Investigations and Reports*.

**Table 3.1. Mishap Severity Definitions**

MISHAP SEVERITY	Level	Descriptive	Quantitative <sup>1</sup>	Mishap Class
Catastrophic	1	Loss of life, aircraft, facility, or expensive and unique system	> \$2M	A
Critical	2	Severe injury, lengthy hospital stay, or permanent injury. Severe aircraft, equipment or property damage	\$500K - \$2M	B
Marginal	3	Minor injury, medical treatment requiring lost work days, but no permanent injury. Minor damage	\$50K - \$500K	C
Negligible	4	Superficial injury, little or no first aid required. Incidental, less than minor damage	< \$50K	D/E
1 - Use values listed in table, or current AFI91-204 guidance, whichever is higher				

**3.3. Determine Mishap Probability.** The safety reviewers will subjectively assess the *mishap* probability with all mitigation in place. The mishap probability level should qualitatively and/or quantitatively measure the likelihood of the *mishap* occurring due to personnel error, environmental conditions, design inadequacies, procedural deficiencies, or system/subsystem component failure or malfunction. The assessment should incorporate engineering judgment and past experience with similar tests or systems with all minimizing procedures and corrective actions in place. If available, the test team and safety reviewers should consider the system safety analysis results from the contractor or system program office in order to understand areas of known concern. For operations where there is a well-developed database or sophisticated modeling/simulation, probabilities may be expressed quantitatively as  $1 \times 10^{-4}$ ,  $3.8 \times 10^{-6}$ , etc. However, for developmental testing, the ability to compute numeric failure probability values with confidence is difficult because these activities involve new, complex, and often unproven systems. Therefore, **Table 3.2** also contains descriptive probability definitions (along with some example descriptive statements) that should be used as a standard to consistently assess mishap probability for all AFTC test activities.

**Table 3.2. Mishap Probability Definitions**

Probability	Level	Descriptive	Quantitative (Probability of occurrence per event <sup>1</sup> )
Frequent	A	Very likely to occur <sup>2</sup>	$> 10^{-1}$
Probable	B	Likely to occur <sup>3</sup>	$< 10^{-1}$ but $> 10^{-2}$
Occasional	C	Some likelihood to occur, but not expected <sup>4</sup>	$< 10^{-2}$ but $> 10^{-3}$
Remote	D	Unlikely to occur <sup>5</sup>	$< 10^{-3}$ but $> 10^{-6}$
Improbable	E	Highly unlikely to occur	$< 10^{-6}$

1 - Event may be defined in local supplements to this instruction.

2 - Test activity (or something similar) done before and a mishap occurred or very nearly did. The test exceeds the design limits. There are multiple test-unique single points of failure possible.

3 - Test activity (or something similar) done before and came close to a mishap. The test is at the design limit. There is at least one test-unique single point of failure possible.

4 - All available analysis has been conducted and no information suggests the chance of mishap occurrence is Frequent or Probable. Test activity may never have been done before but areas of concern have been identified. The test is nearing the design limit.

5 - Test activity (or something similar) done before with no problems encountered. Well within the design limits. No test-unique single points of failure.

**3.4. Risk Assessment Matrix.** The risk assessment matrix, shown in **Figure 3.1**, is a tool for assessing mishap risk of test hazards as documented in safety planning documents. The risk categories are discretely divided into four shaded regions to distinguish between NEGLIGIBLE (hashed), LOW (white), MEDIUM (grey), and HIGH (diagonal pattern) risk levels. The correlation of approval authorities with the assigned overall risk level is discussed in **Chapter 4**. Despite the discrete distinction between each risk level, safety reviewers are reminded of the subjective nature of their assessment. This subjectivity is illustrated within the Risk Matrix using two curved subjectivity lines. The region between the subjectivity lines denotes a subjective MEDIUM risk level. Any block bisected by a subjectivity line becomes a “block of subjectivity”. A subjective assessment differing from the discrete risk level blocks is addressed further in **Paragraph 3.6.1**. The use of the matrix defined in **Figure 3.1** and locally developed Test Safety Review Processes defined in supplements to this instruction are in accordance with AFI 91-202, *The US Air Force Mishap Prevention Program*, AFMC Sup, Chapter 13.

Figure 3.1. Risk Assessment Matrix

		Mishap Severity Category			
		<b>Catastrophic – I</b> Death, System/Facility Loss (e.g. Class A Mishap)	<b>Critical – II</b> Severe Injury, Major System/Facility Damage (e.g. Class B Mishap)	<b>Marginal – III</b> Minor Injury, Minor System/Facility Damage (e.g. Class C Mishap)	<b>Negligible – IV</b> Less than Minor Injury or System/Facility Loss (e.g. Class D/E Mishap)
Probability of Mishap Occurring During the Test	<b>Frequent (A)</b>				
	<b>Probable (B)</b>	<b>HIGH</b>			
	<b>Occasional (C)</b>		<b>MED</b>		
	<b>Remote (D)</b>			<b>LOW</b>	
	<b>Improbable (E)</b>				<b>NEGLIGIBLE</b>

**3.5. Negligible Risk.** The negligible overall risk category reflects a subset of “low” risk applicable to activities that are normal or routine operations. The Negligible Risk category is defined as hazards where the severity and probability assessments fall in the Negligible Severity column and Occasional, Remote, or Improbable Probability rows on the Risk Assessment Matrix. Due to the subjective nature of any risk assessment, an overall assessment greater than negligible for these blocks could still be appropriate.

3.5.1. For the severity category to be Negligible, the consequences of a mishap attributable to test activities must be less than minor injury or system damage. For personnel, the impact of the injury or illness equates to no work days lost. For equipment or facilities, less than minor damage equates to losses less than \$50,000 (or current Class D definition). Applicable mishap probabilities for NEGLIGIBLE risk are limited to “occasional, “remote”, or “improbable” levels. If the test team or reviewers identify test unique hazards that warrant a Test Hazard Analysis document, then an overall risk category of NEGLIGIBLE is not appropriate.

3.5.2. Examples include: ride-along data collection points, special instrumentation checkouts, form-fit-function checkouts of non-critical hardware/software, sensor or system tests, or logistics testing activities that do not directly affect the airworthiness of an aircraft or performance of a test facility nor are they required for hazard avoidance.

**3.6. Determine Overall Risk Assessment.** An overall risk level assessment is accomplished after all hazards to the test have been identified and mitigations are clearly defined and documented in accordance with **Section 4.4**. Hazards that are unique to the test will be documented in the AFTC Form 5000, *Test Hazard Analysis (THA)*. Hazards associated with normal operation and maintenance may be documented in a locally produced Baseline Hazard



Analysis (BHA) form. Plot the combination of mishap severity and probability on the Risk Assessment Matrix for each hazard. Once all the individual hazards are plotted, the test team will discuss the safety aspects of the plan and propose an overall project risk level. Project risk will be no lower than the lowest assessed risk from all the hazards. A detailed explanation of THAs and BHAs is discussed in **Section 4.4 Test Package Documentation**.

3.6.1. Subjective Assessments. As discussed in previous sections, both the THA and overall risk assessment can be highly subjective as each test team member and safety reviewer incorporates engineering judgment and/or past experience with similar tests or systems into their risk level assessment. Because of this subjectivity, a test team or safety reviewer may conclude that risk levels that fall within “blocks of subjectivity” may be higher or lower than depicted by the discreet risk level regions. For this reason, test teams and safety reviewers may utilize the subjectivity lines to fine tune their risk assessment if THA or overall risk assessment falls within a block bisected by a subjectivity line. The region between the subjectivity lines denotes a subjective MEDIUM risk level. Therefore, subjective risk assessments may only be adjusted one risk level higher or lower than the discrete risk assessment. The use of subjectivity lines is at the discretion of each Wing or Complex per supplements to this instruction.

3.6.2. THA Risk Assessment. The test team may assess the pre- and post-mitigation mishap severity category and probability level by plotting both on the Risk Assessment Matrix at **Figure 3.1**. This provides a comparison between initial and residual risk levels to evaluate the adequacy of safety measures and best available solution. Test teams and safety reviewers should note that although a minor improvement to the safety plan may not change the assessed “severity”, “probability”, or “risk”; it will still reduce the actual risk. The residual risk level determined by the test team for each THA acts as a proposal for the independent safety reviewers to affirm or adjust as necessary.

3.6.3. Overall Risk Assessment. The test team will propose an overall risk level for the test plan as determined by procedures discussed in this section. During the safety review phase (outlined in **Chapter 5**), the independent safety reviewers will have a general discussion of the test, identified hazards, and associated mitigation to generate opinions on the residual risk. The discussions should be candid and result in a general agreement by the board, although disagreements may occur. Safety reviewers will weigh the control measures in place, their experience with the types of tests, and the system under test (SUT) to assess the overall risk. The cumulative risk may (and frequently does) exceed the assessed risks for all THAs individually. However, the overall risk cannot be lower than the risk associated with any individual THA. The safety reviewers must also consider the complexity of the test, the potential for safety-related “unknown unknowns”, and their own experience with similar test activities. By using the Risk Assessment Matrix (**Figure 3.1**) and referencing the overall risk level descriptions, shown in **Table 3.3**, each safety reviewer should assess overall risk and provide justification for their assessment. This justification is especially important if subjective assessments are incorporated as outlined in **Paragraph 3.6.1**.

**Table 3.3. Overall Risk Level Assessment**

Assessment	Description and Implication
HIGH RISK	Tests or activities that present a significant risk to personnel, equipment, and/or property even after all precautionary measures have been taken.
MEDIUM RISK	Tests or activities that present a greater risk to personnel, equipment, and/or property than normal operations even after all precautionary measures have been taken.
LOW RISK	Test or activities that present no greater risk than normal operations. Routine supervision is appropriate
NEGLIGIBLE RISK	Activities that are normal, routine, and operationally representative

3.6.3.1. In some situations, sufficient information may not be available to complete a risk assessment. The Test Safety Office of each AFTC organization will determine a course of action to develop resolution and may reconvene the safety reviewers to perform the assessment at a later date.

3.6.3.2. If appropriate, the risk may be assessed separately for AFTC and non-AFTC assets, for different phases of the test programs, or for individual test events.

**3.7. Elevated Risk Activities.** Certain tests conducted at AFTC organizations have demonstrated a higher than normal risk due to the inherent hazards involved. However, if the analysis of test activities clearly indicates that the predicted performance (flying qualities, pilot induced oscillation susceptibility, flutter margin, loads margin, etc.) is well within acceptable levels, the test point need not be considered elevated risk. This may be especially true if the analysis model has been validated through other simulation or test activity. In the absence of quantitative probability data, however, use the following list of tests as a *guide* in identifying those tests which require close analysis to determine if an elevated risk level is warranted. The following list is not all inclusive, other similar activities may also be considered elevated risk:

3.7.1. Rocket motor test firing.

3.7.2. High Mach air load wind tunnel testing.

3.7.3. Radome vulnerability assessment testing.

3.7.4. Scaled model loads testing.

3.7.5. First flights of new/modified aircraft configurations (including new structures, changes to: flying qualities, performance, armament configurations, and major T-2 modifications).

3.7.6. New or modified aircraft life support systems.

3.7.7. Flight envelope expansion.

3.7.8. Flutter testing.

3.7.9. High speed testing of legacy aircraft up to envelope limits.

3.7.10. Rejected takeoffs, or performance landings at high sink rates, high crosswinds, or high brake energy levels.

- 3.7.11. Single-engine aircraft air start envelope determination.
- 3.7.12. High angle of attack, spin prevention and out of control tests.
- 3.7.13. Helicopter height-velocity envelope determination.
- 3.7.14. Ground and air minimum control speed determination.
- 3.7.15. Flight tests of development or prototype unmanned vehicles.
- 3.7.16. Tests involving high energy devices or hazardous materials.
- 3.7.17. Armament testing to include testing with live warheads.
- 3.7.18. Powered flight of developmental or prototype missiles.
- 3.7.19. Flight envelope clearance tests of new armament or release systems.
- 3.7.20. Photo/safety chase of any weapon during fly-out or termination.
- 3.7.21. Terrain avoidance and terrain following tests.
- 3.7.22. Initial man/equipment aerial deliveries.
- 3.7.23. Photo/safety chase of dynamic or low altitude maneuvering.

## Chapter 4

### TEST SAFETY PLANNING PHASE

**4.1. Test and Safety Planning.** Safety planning and test planning are integral and iterative processes, and as such, both should be interwoven to ensure the test methods incorporate safety controls where possible. Well planned tests that consider and incorporate risk control measures to eliminate or mitigate test hazards are inherently safer than test plans without this safety emphasis. This chapter covers considerations and guidance during the test safety planning and review phases.

#### **4.2. Safety Considerations During Test Planning.**

4.2.1. Test Approach or Build-up. During test plan development, the test team will carefully consider the test approach or build-up. The way the test approaches a hazardous or unknown condition must be clearly defined. If predictive analysis does not exist, or has questionable validity, the test methodology may require a more refined buildup approach to offset the risk. Criteria to continue, or more importantly when to stop, can provide good risk control by providing a clearly defined roadmap into the test team's decision making. This decision-making process is extremely important and should be documented.

4.2.2. Test Plan Size and Complexity. The test team must consider the size and complexity of the test plan and assess whether a review of a large, complex safety plan is more or less advantageous than several smaller reviews. If feasible, teams may conduct test safety planning for large, complex test plans in smaller, less complex safety plans matched to progressive phases of the test program.

4.2.3. Integration. If the planned testing utilizes more than one test plan, test information sheet (TIS), or procedure, it is incumbent upon the team to provide a clear test progression description. Without a clear path, the ability to identify hazards appropriately and develop a sensible risk assessment is difficult. The test team should be aware of this basic issue to avoid significant and unplanned schedule delays caused by action items or cancelled safety review boards.

#### **4.3. Safety Planning Objectives.**

4.3.1. Identify Test Unique Hazards. The team will identify unique hazards associated with each type of test or activity. In some cases test activities may elevate the risk associated with routine operational hazards, thus requiring additional safety planning. The following are some additional suggestions for identifying test unique hazards.

4.3.1.1. Refer to archived safety planning for consideration of similar tests.

4.3.1.1.1. **(Added-EDWARDSAFB)** The 412 TW Test Safety Planning archive is located on the 412 TW/SET SharePoint site or available from 412 TW/SET. This archive is only accessible by US military and DoD civilians.

4.3.1.2. Contact personnel or test teams with experience in similar test activities or testing.

4.3.1.3. Research technical aspects via technical libraries, internet, etc.

#### 4.3.2. Eliminate or Control Hazards in the Following Order of Precedence.

4.3.2.1. Design the test to eliminate the probability of the hazard occurring. This could include a decision to not perform the test if the risk is deemed to be unacceptably high. A redesign of the system to eliminate the hazard is another option.

4.3.2.2. Change the test methodology to reduce the probability, severity, or exposure to the hazard (building up to the test condition can be a strong control method).

4.3.2.3. Incorporate safety devices (e.g. spin chute, or additional power sources).

4.3.2.4. Provide caution and warning devices to detect an unsafe condition or trend.

4.3.2.5. Develop procedures and training when it is impractical to change the design or test methodology.

#### 4.4. Test Package Documentation

4.4.1. The “test package” shall be an all-encompassing package of documents consisting of a test plan, safety plan, and any other appendices or documentation that support the test planning. The safety plan will be located in the “Safety Annex” to the test plan. Additional guidance on the test planning process and documentation can be found in local Wing or Complex test planning instructions.

4.4.1.1. (**Added-EDWARDSAFB**) Test package and Safety Plan documentation formats and initial test package layout are described in Attachment 2.

4.4.2. The safety plan should follow documentation guidance from Chapter 13, paragraph 13.5.4, of AFI 91-202, *The US Air Force Mishap Prevention Program* as supplemented by AFMC. The safety plan shall also include documentation of General Minimizing Procedures (GMPs), THAs, BHAs, and a BSR (if applicable). THAs will be documented on an AFTC Form 5000, *Test Hazard Analysis*. BHAs will be documented in accordance with local supplements. Format and structure of the safety plan may be further defined in local supplements to this instruction.

4.4.2.1. THAs are stand-alone documents that assess the risk associated with a single test unique hazard. A hazard is any condition that has the potential of causing a mishap. Confirm that the hazard is not a hazard associated with the basic operation of the aircraft, test article, vehicle, system under test, or facility. If the hazard is not unique to the series of tests, no THA is required. For example, midair collision with non-participating aircraft and bird strikes are not generally considered test unique hazards. However, should the very nature of the test increase the probability of these hazards above that of normal operations, they should be addressed as test unique hazards. The THA will include the following:

4.4.2.1.1. Mishap severity and probability of the Hazard as discussed in detail in **Chapter 3**.

4.4.2.1.2. Causes are anything that could lead to the presence of the hazard. This is the cause of the hazard, not the mishap. There may be more than one cause.

4.4.2.1.3. Effect is the mishap that may happen if the hazard is not controlled. The mishap is what the THA is trying to prevent and is directly related to the mishap severity level.

4.4.2.1.4. Controls or Minimizing Procedures should be an action or procedure and tied to a specific cause, causes, or effect it is trying to control. These attempt to break the chain of events linking the causes to the hazard.

4.4.2.1.5. Corrective Actions or Emergency Procedures are the list of actions taken to prevent or mitigate a mishap (the effect) if the hazard occurs. Actions may be taken by the control room, ground personnel, flight crew, test facility operators, and anyone else participating in the test. Test unique and hazard specific emergency procedures would be listed here. If not test unique, corrective actions may state operation manual procedures will be followed. These attempt to break the chain of events linking the hazard to the mishap.

4.4.2.1.6. Comments are optional information that help support the THA risk analysis but are not directive in nature and do not contribute to breaking the mishap chain.

4.4.2.2. GMPs are stand-alone phrases/statements and used to address test article restrictions, test build-up, critical parameter monitoring, go-no-go criteria, weather or environmental criteria, and flight test chase requirements among other items of test safety concern. Some general minimizing procedures from THAs or BHAs may be repeated as a GMP if desired for emphasis.

4.4.2.3. Baseline Hazard Analysis (BHA) – An analysis used to document known hazards concerned with the normal day-to-day operation and maintenance of a system, subsystem or facility.

4.4.2.4. Baseline Safety Report (BSR) – A compilation of the entire baseline hazard analysis for a test unit, plant operation, utility, etc. The BSR allows the individual hazard analyses that make up the baseline to be evaluated in a comprehensive package and thus shows the interaction of the systems and interfaces.

4.4.3. Safety plans may be prepared electronically or printed and arranged in hardcopy format. Electronic signatures may be used for coordination and approval of electronic packages.

4.4.3.1. **(Added-EDWARDSAFB)** Electronic packages are preferred. If electronic packages are used, the test team will upload them to the 412 TW/SET SharePoint site and E-mail a link to each coordination or approval member.

4.4.3.2. **(Added-EDWARDSAFB)** If hardcopy packages are used, the test team will also upload a copy to the 412 TW/SET SharePoint site or provide a CD or DVD containing all the documents included in the hardcopy package.

4.4.3.3. **(Added-EDWARDSAFB)** Variations to the hardcopy package format can be authorized by 412 TW/SET.

4.4.4. Statement of Capability (SOC). The following wording must be included in any SOC that is transmitted to a customer when the safety review process is required: “AFTC Safety Review: The proposed test/activity must be reviewed using the procedures contained in AFTCI 91-203, AFTC Test Safety Review Policy and any local supplements to this instruction. To support this review, safety planning must begin early in the program.”

4.4.4.1. **(Added-EDWARDSAFB)** The customer, with guidance from a locally specified host organization, is responsible for providing information and technical support to conduct the Test Safety Review Process. Without this information, the ability of the 412 TW to identify hazards and develop a risk assessment will be difficult and can result in lengthened review times. As a guide, the customer should provide the following information to the host organization:

4.4.4.1.1. **(Added-EDWARDSAFB)** A system description with technical detail for the systems under test.

4.4.4.1.2. **(Added-EDWARDSAFB)** Technical descriptions of test-enabling modifications.

4.4.4.1.3. **(Added-EDWARDSAFB)** System safety hazard analyses.

4.4.4.1.4. **(Added-EDWARDSAFB)** Flight termination system descriptions and reliability assessments, if applicable, IAW Range Commanders Council (RCC) Document 319-10.

4.4.4.1.5. **(Added-EDWARDSAFB)** A clear description of test progression or decision-making method if the proposed testing is complex, has multiple test paths or uses multiple test plans or procedures.

4.4.4.1.6. **(Added-EDWARDSAFB)** Other relevant materials requested by the host organization.

4.4.4.2. **(Added-EDWARDSAFB)** For planning purposes, plan to begin the Final Safety Review phase of the test safety review process at least 50 calendar days prior to the start of test with the goal of obtaining approval of the test package (which includes the test plan and safety annex) no less than 7 calendar days before the test.

4.4.4.3. **(Added-EDWARDSAFB)** For tests or activities using non-Air Force assets (e.g., flight tests or tests that have the potential to damage 412 TW property or the environment), the pre-mishap plan shall be coordinated with 412 TW Flight Safety (412 TW/SEF) and Disaster Preparedness (412 CE/CEXX). Contact 412 TW/SET for guidance if required.

4.4.5. Mishap Accountability. Detailed information on mishap accountability and investigating responsibility must be provided by the test team in the Safety Annex when deviating from AFI 91-204, or if non-Air Force assets are involved, to include pre-mishap planning. A memorandum of agreement is the preferred method when multiple agencies are involved.

**4.5. (Added-EDWARDSAFB) Special Procedures.** For safety planning or tests with special considerations not covered elsewhere in this publication, see Attachment 10.

## Chapter 5

### TEST SAFETY REVIEW PHASE

**5.1. Safety Review Preparation.** In preparation for an independent safety review, test teams should perform the following:

- 5.1.1. Determine the type of safety review (examples in [Paragraph 5.2.2](#)) and consult Wing/Complex Test Safety office for concurrence.
- 5.1.2. Evaluate the probability and severity category for each Test Hazard Analyses (THAs) or Baseline Hazard Analyses (BHAs) ([Chapter 3](#)). Provide to the safety reviewers the proposed overall risk level and any test points or test phases which may have a lower risk than the overall risk level (if they exist). Include the rationale for the varying risk levels. The proposed risk level(s) will be considered during the independent safety review.
- 5.1.3. Develop a list of safety reviewers following guidance in [Section 2.3](#)
- 5.1.4. **(Added-EDWARDSAFB)** Develop a realistic timeline to complete the final safety review and approval in order to meet the desired start test date. Guidelines are provided in Attachment 5 and are based on the type of safety review.

**5.2. Safety Review.** The purpose of the Safety Review phase is to allow an independent team to formally review the test unit's safety planning to ensure that all test hazards have been identified and mitigated, and then assess the residual risk. The documentation from the Safety Review phase should reflect a suitable level of clarity and maturity for the Test Execution Authority to make an informed decision on whether to proceed with test execution. The Wing or Complex Test Safety office is the focal point for the Safety Review phase.

**5.2.1. Objectives:**

- 5.2.1.1. Ensure appropriate test hazards associated with the test activity are identified.
- 5.2.1.2. Ensure the proposed risk control measures sufficiently mitigate (minimize or eliminate) the hazards caused by the test/activity to an acceptable level.
- 5.2.1.3. Assess and recommend an appropriate residual risk level for the test/activity.
- 5.2.1.4. Ensure the safety annex clearly and adequately provides enough information to support an approval decision by senior leadership.

**5.2.2. Types of Independent Safety Reviews.** Below are four types of independent safety reviews that may be used to complete the safety review phase. The Wing or Complex Test Safety office may advocate additional types of reviews as defined in local supplements to this instruction. The test team will review relevant documentation and propose a review type to the Test Safety office, who will make the final determination. The four types of independent safety reviews are:

- 5.2.2.1. Safety Review Board (SRB).
- 5.2.2.2. Electronic Safety Review (ESR).
- 5.2.2.3. Combined Technical Review Board (TRB)/SRB.
- 5.2.2.4. Negligible Risk Review (NRR).



**5.3. Safety Review Board.** The SRB is a formal safety review meeting attended by independent safety reviewers and project personnel, and is chaired by a designated Wing or Complex Test Safety office representative. The decision to conduct an SRB is based primarily on the test plan size, complexity, maturity of test item/methodology, and expected risk level. To the maximum extent possible, independent safety reviewers chosen for the SRB should be the same individuals that served as independent reviewers for the technical review. This is to ensure continuity of information regarding test methodology is preserved throughout the review and approval process and should result in a more insightful and thorough SRB.

5.3.1. **(Added-EDWARDSAFB)** The 412 TW Safety Review Board process is described in Attachment 6.

**5.4. Combined TRB/SRB.** For those tests that are easily understood, less complex, or lower in risk, the test team may request a combined TRB/SRB in lieu of separate technical and safety reviews to minimize impact to resources and shorten the timeline. Teams should contact the Test Safety office for final determination on this course of action. Teams will ensure that the test plan is sufficiently mature for safety review prior to the combined TRB/SRB.

**5.5. Electronic Safety Review.** The Electronic Safety Review is a formal safety review of test packages by independent safety reviewers, to include the Test Safety office that occurs without a meeting. The test package is typically distributed electronically and reviewed in parallel by the safety reviewers. An Electronic Safety Review is appropriate when test activities are readily understood by reviewers, tend to be less complex, and are lower in risk.

5.5.1. **(Added-EDWARDSAFB)** The 412 TW Electronic Safety Review process is described in Attachment 7.

**5.6. NEGLIGIBLE Risk Review.** A Negligible Risk Review (NRR) is a streamlined technical and safety review process applicable to a subset of low risk tests. Resultant test hazards cannot have severities greater than “negligible” or probabilities greater than “Occasional” (See [Figure 3.1](#), Risk Assessment Matrix). Test activities that are normal, routine, and operationally representative are also candidates for an NRR process since the risk is effectively the same as the operational risk.

5.6.1. NRR Qualification. NRR qualification of a test program should be proposed by the test team to the Wing or Complex Test Safety office who will make the final determination based on the following criteria:

5.6.1.1. The risk level for the test activity must be assessed as negligible and fall within the hashed blocks in the Risk Assessment Matrix, (see [Figure 3.1](#)). Examples of these activities are listed in **Paragraph 3.5.2**.

5.6.1.2. Testing will adhere to normal operating procedures and existing risk control measures as defined in the approved flight manual(s), technical orders, test facility procedures, and/or operational guidance/instructions (e.g. Air Force Instructions, Air Force Materiel Command Instructions, and Air Force Test Center Instructions).

5.6.1.3. GMPs are allowed only to the extent that they clarify or further restrict already existing guidance. If the test team or reviewers identify test unique hazards that warrant a Test Hazard Analysis document, then the NRR process is not appropriate.

5.6.1.4. Routine and existing aircrew/operator training, qualification, and proficiency are sufficient to perform the test activity, test or maneuver.

5.6.1.5. Test procedures do not involve the use of abnormal or emergency procedures, checklists or configurations.

5.6.1.6. For flight test, the SUT has no airworthiness impact, such that a failure or malfunction of the SUT would cause the use of abnormal or emergency procedures to safely recover the aircraft.

5.6.2. NRR documentation will be located in the Safety Annex to the Test Plan.

5.6.3. Each Wing/Complex may define a NEGLIGIBLE Risk Review and approval process in a local supplement to this instruction. If defined locally, the NRR process will comply with NRR qualification guidance in this Chapter and the approval coordination path defined in **Table 6.1**.

5.6.4. **(Added-EDWARDSAFB)** The 412 TW Negligible Risk Review process is described in Attachment 8.

## Chapter 6

### TEST SAFETY APPROVAL PHASE

**6.1. Approval Authorities and Notification Levels.** All activities conducted in accordance with paragraph 1.6 require approval before beginning execution. The approval phase provides appropriate leadership the opportunity to make an informed risk acceptance and test approval decision based on the safety review and risk assessment completed in the safety review phase. The Test Execution Authority (TEA) for these activities is based on the proposed risk level as outlined in **Table 6.1**. Approval is defined as permission to conduct or participate in the test program or activity granted by the appropriate TEA. The TEA may require a Test Approval Brief (TAB) to assist in making an informed decision. Signature of the TEA on AFTC Form 5001, *Test Project Safety Review*, constitutes acceptance of the risk and approval to begin activities under the conditions set forth in the test package. A signed safety package does not authorize deviation from Air Force, AFMC, or AFTC instructions or directives.

**Table 6.1. Approval Process Coordination Path**

Organization Level	NEGLIGIBLE Risk	LOW Risk	MEDIUM Risk	HIGH Risk
Safety Office	Coord	Coord	Coord	Coord
Squadron CC (or equivalent)	Approve	Coord	Coord	Coord
Group CC (or equivalent)	Info	Approve*	Approve	Coord
Wing/Complex CC	Not Required	Info	Info	Coord
AFTC SE	Not Required	Not Required	Not Required	Coord
AFTC CC	Not Required	Not Required	Not Required	Approve**
HQ AFMC/SE/A3	Not Required	Not Required	Not Required	Info
* may be delegated in writing to Squadron CC (or equivalent)				
** may be delegated in writing to Wing or Complex Commanders				

**6.2. Delegation.** When approval authority is delegated to a lower organization level, the approval coordination path in **Table 6.1** is still followed but with an info copy sent to the original approving authority. Signature delegation will be no lower than the applicable deputy/vice commander.

### 6.3. LOW Risk Activities.

6.3.1. The Group CC (or equivalent) is the TEA for approval to execute all low-risk test events. However, final approval to execute low risk test may be delegated in writing to the Squadron CC (or equivalent) in compliance with AFI 91-202 as supplemented by AFMC.

6.3.1.1. **(Added-EDWARDSAFB)** Low risk approval authorities:

6.3.1.1.1. **(Added-EDWARDSAFB)** 412 Operations Group Commander (412 OG/CC). All flight tests and ground tests that involve aircraft operations. All flight training or aerial events not covered under a test plan or approved publication.

6.3.1.1.2. **(Added-EDWARDSAFB)** 412 Test Engineering Group Director (412 TENG/CL). Tests in EN controlled facilities. Joint approval with 412 OG/CC if assets under OG control are involved in the test.

6.3.1.1.3. **(Added-EDWARDSAFB)** 412 Electronic Warfare Group Commander/Director (412 EWG/CC or EWG/CL). Tests in EWG controlled facilities. Joint approval with 412 OG/CC if assets under OG control are involved in the test.

6.3.1.1.4. **(Added-EDWARDSAFB)** 412 Maintenance Group Commander (MXG/CC). Logistics tests conducted in maintenance facilities not associated with a specific test organization or not included as part of a flight test.

6.3.2. NEGLIGIBLE Risk activities, as defined in **Paragraph 3.5**, are a subset of LOW Risk and may be approved no lower than the Squadron CC (or equivalent). If the Squadron CC is unavailable for approval, NEGLIGIBLE Risk activities default to LOW Risk approval requirements.

**6.4. Elevated Risk Activities.** Elevated risk activities are those that result in a residual risk level of MEDIUM or HIGH. Example elevated risk activities are provided in **Section 3.7** but are not limited to activities on this list.

6.4.1. MEDIUM Risk Test Approval. The Group CC (or equivalent) is the TEA for approval to execute all MEDIUM risk test events.

6.4.2. HIGH Risk Test Approval.

6.4.2.1. The AFTC/CC is the TEA for all HIGH risk test events. Final approval to execute HIGH risk test may be delegated in writing to the Wing or Complex CC.

6.4.2.2. If non-AFTC assets/personnel are involved, the asset owner must be notified of the high residual risk prior to test execution. Notification method will be established in local supplements.

6.4.2.3. HQ AFMC/SE/A3 must be notified of high risk tests prior to execution in accordance with AFI 91-202 AFMC Sup para 13.3.4.6. AFTC/SE will send this notification in conjunction with HIGH risk safety plan approval. Wing/Complex Safety offices will inform AFTC/SE when HIGH risk packages have been approved if TEA has been delegated to Wing or Complex CC level.

**6.5. Test Approval Brief.** The TEA or any other Commander on the Approval Coordination Path may require a Test Approval Brief to assist in making an informed decision. A TAB should be an executive level meeting that provides a test program overview and highlights test unique hazards, mitigation procedures, discussion points during the independent review, and any contention or disagreement by the independent board and the test team. The TAB may be combined with an SRB if the TEA is in attendance.

6.5.1. **(Added-EDWARDSAFB)** Approval Briefing Attendance.

6.5.1.1. **(Added-EDWARDSAFB)** Appropriate project personnel (government and contractor) to answer such questions as may be reasonably expected to arise. As a minimum, a project pilot (or test conductor for ground tests) and a project engineer will attend.

6.5.1.2. **(Added-EDWARDSAFB)** 412 TW/SET representative.

6.5.1.3. **(Added-EDWARDSAFB)** All coordinating officials that have not signed the test package prior to the approval briefing are required. All coordinating officials who have already signed must also be invited.

6.5.1.4. **(Added-EDWARDSAFB)** If an action item or coordination comment has not been resolved, the commenting official should be present.

6.5.1.5. **(Added-EDWARDSAFB)** The independent safety reviewers should be invited to attend and should be present if issues exist in the areas of their expertise.

6.5.2. **(Added-EDWARDSAFB)** Scheduling. The PSL is responsible for scheduling the meeting time and location with coordination and approval officials. For example, a high risk test package approval briefing to the AFTC/CC requires coordination with 412 TW/SET, 412 TW/SE, 412 TW/CT, 412 OG/CC, and 412 TW/CC. Coordination officials may wish to be briefed prior to the approval authority.

6.5.2.1. **(Added-EDWARDSAFB)** Required attendees must be contacted to verify they are aware of the briefing time, date, location and their ability to attend.

6.5.2.2. **(Added-EDWARDSAFB)** The PSL must also ensure appropriate computer, projection, and communication support is available to conduct the meeting.

6.5.2.3. **(Added-EDWARDSAFB)** A copy of the approval briefing will be provided to all attendees at least two working days in advance or as directed by the approval authority.

6.5.3. **(Added-EDWARDSAFB)** Approval Briefing Format. The test team will provide a briefing and will use the most current Approval Briefing Template as hosted on the 412 TW/SET SharePoint site.

6.5.4. **(Added-EDWARDSAFB)** Approval Briefing Conclusion. The test team will make all required changes to the safety documentation that result from the approval briefing. The approval authority may approve the test package at the approval briefing with or without conditions. Coordination comments made during the approval briefing will be written and the wording verified by the commenting authority before adjourning the meeting so the test team has clear understanding of tasking.

## **6.6. Acceptance of Safety Planning across AFTC.**

6.6.1. An AFTC test program which has been approved through an AFTC test wing/complex's technical and safety review processes may be executed by a different, supporting, AFTC test wing/complex.

6.6.2. The originating test wing will notify the supporting wing when the technical and safety review processes are complete and the test program is approved for execution. The originating test wing will provide the supporting wing with test and safety planning documentation required under the originating test wing processes. The supporting wing may accept this documentation as written, or may request additional safety or test review following their own wing supplement to this instruction. Differences will be resolved by equivalent TEAs from each wing. The supporting wing may then execute any assigned

portion of a test program which has been approved to execute under the originating test wing processes.

6.6.2.1. **(Added-EDWARDSAFB)** The originating test wing/complex or local supporting/participating agency will provide the test package in the originating wing/complex's format with the addition of a cover letter memorandum for record (MFR). This MFR will provide an executive summary stating a short overview of the package, the assets at risk, participating units and appropriate local and/or originating wing/complex points of contact for the test package.

6.6.2.2. **(Added-EDWARDSAFB)** The test package cover letter MFR will be signed at the local leadership level commensurate with the assessed safety risk level (see Table 6.1) and will indicate concurrence or non-concurrence. Signature and concurrence of this MFR constitutes 412 TW acceptance of safety planning.

6.6.2.3. **(Added-EDWARDSAFB)** Variations of this MFR format requirement can be authorized by 412 TW/SET. Additional information and/or briefings may be required by the approval authority.

6.6.3. Test execution materials (e.g. test cards or mission decks) may be developed by either the originating or supporting test wing. The organization creating the mission materials will adhere to local guidance for formatting, content and approval. Mission materials will be approved by the executing organization in accordance with their local procedures.

## Chapter 7

### TEST EXECUTION PHASE

**7.1. General.** The procedures, restrictions, and mitigations documented in the Safety Plan must be observed while conducting the test in order to maintain the accepted level of risk. Safety Plan requirements take precedence over those specified in the test plan. The safety plan is a contract between the test team and senior leadership.

#### **7.2. Test Card/Test Period Directive Preparation and Approval.**

7.2.1. Test Cards/Test Period Directives/etc. are documents describing the test activity procedures in a step-by-step or checklist format. These documents are used by test teams to successfully complete test activities. They may be reused for multiple test programs but should not be overly general in documentation. Inherently, they should be a synopsis of operation, test and/or manufacturing technical data immediately available to reference for the test team in executing test activities effectively, efficiently and safely.

7.2.2. During test card or test period directive preparation, the test team will review applicable general minimizing procedures, test hazard analysis and Baseline Hazard Analysis to ensure the procedures comply with safety limits, procedural constraints or approved Test Plan requirements.

7.2.3. Test execution procedures, whether documented in test cards or another format, must be approved prior to use during testing. Test card approval levels will be documented in local Wing/Complex instructions.

7.2.4. **(Added-EDWARDSAFB)** All test cards will be approved IAW EDWARDSAFBI 99-105, *Test Control and Conduct*.

7.2.5. **(Added-EDWARDSAFB)** The order or sequence of the test cards may have a direct effect on the safety of a given test mission. Approved test cards, or “test decks,” may be reordered or re-sequenced without re-approval if there is no impact to the required buildup order or test safety. Test teams must ensure that test approaches and build-ups, as defined or intended in the test and safety plans, are adhered to in all cases.

**7.3. Test/Mission Execution Briefing.** During the test/mission execution brief, the test team will address the procedures and restrictions specified in the Safety Plan. As a minimum, all general minimizing procedures, test hazard analyses and baseline hazard analyses applicable to that particular test will be covered during the test briefing

**7.4. Unusual Events.** An “unusual event” or “unexpected test result” is any occurrence that warrants a safety-related pause in the test program. If an unusual event occurs, the test team will consult with the Wing or Complex Test Safety Office representative and associated test points will be placed on hold. Once a recovery plan of action is determined, unusual events will normally be documented with a safety plan amendment. Testing of the suspended test points may be resumed upon approval of the appropriate change documentation, as described in **Chapter 8**. Unusual events include, but are not limited to:

7.4.1. Damage to the test article or support equipment.

7.4.2. Exceeding safety of test limits.

- 7.4.3. Unfavorable departure from predicted simulation/analysis.
- 7.4.4. Occurrence of a THA/BHA hazard requiring corrective action.
- 7.4.5. Occurrence of a hazard requiring corrective action not already mitigated by procedures defined in a THA/BHA form.
- 7.4.6. Any lesson learned that needs to immediately pass to the entire test team.



## Chapter 8

### CHANGES AND TIME LIMITS

**8.1. Changes.** It is not unusual for project changes to arise after receiving test approval. Unexpected results, overly restrictive controls, hazards not previously identified or adequately controlled, and changes in risk level all constitute reasonable grounds for changing safety planning. All project changes will re-accomplish the following test safety review process phases: safety planning, safety review, and approval. However, the scope of each phase may differ significantly from that of an original safety plan, depending on the changes and documentation method used.

**8.2. Major Changes.** Any potential change in risk level (higher or lower), major test plan change, changes to safety planning, and unusual events are considered major changes that affect test conduct or safety planning. Major changes require additional safety planning, independent safety review, and approval before continued testing with these changes incorporated.

8.2.1. Risk Level Change. During the course of testing, information may be obtained that potentially warrants a change in risk level. This could be an increase in the risk based on unexpected results or a decrease in risk level due to increased system maturity.

8.2.1.1. The approval authority for an increase in risk level will be based on the “new” risk level IAW **Chapter 6** (i.e. an upward change to HIGH risk requires AFTC/CC approval if not already delegated).

8.2.1.2. The approval authority for a decrease in risk level will be based on the “original” risk level IAW **Chapter 6** (i.e. a downward change from HIGH risk requires AFTC/CC approval if not already delegated).

8.2.2. Major Test Plan Change. The definition of major test plan change will be outlined in local supplements. Generally, substantive changes to test objectives, technical approach, or test procedures will also require an amendment to safety planning as defined in the Safety Annex. Individuals performing the final safety review should be the same as those from the original package, if available. For multi-discipline test plans, only the discipline(s) affected by the amendment need to be included for review along with an operations representative.

8.2.3. Change to Safety Planning. Any change to content of the safety plan is considered a change to safety planning. The desired changes could be more restrictive or less restrictive than the approved safety planning.

8.2.4. Unusual Event. Safety plan documentation following an unusual event should describe the occurrence of the event, summarize the cause(s) as they are understood by either analysis or hypothesis, and identify the test team’s intended path for the resumption of testing.

8.2.5. **(Added-EDWARDSAFB)** Procedures for change documentation, summaries of changes and amendments are described in Attachment 9.

**8.3. Minor and Administrative Changes.** Some changes to the approved test package may be classified as minor or administrative only and will be defined in local supplements. Minor test plan changes may include changing the flight conditions of test points, adding test points

(provided the new conditions are within the approved envelope of test points), or deleting test points that are not a part of safety build-up. An administrative change to the test package clarifies information contained in the package and does not affect test conduct or safety planning. Locally approved procedures for documenting and approving minor or administrative changes may be defined in supplements to this instruction. The test unit commander (or equivalent) may be the approval authority for any changes not defined as Major Changes in **Section 7.2**.

8.3.1. **(Added-EDWARDSAFB)** After coordination with 412 TW/SET, an UTSO may make red line changes (with initials) directly to the original package. These changes, even if documented on a memorandum, are not considered an amendment to the test package. The test team must thoroughly question the background and implications of all administrative changes to ensure they would not benefit from additional review. Any change may be an indication of inadequate safety planning, no matter how minor it originally appears. Upon the next safety plan amendment, these administrative changes will be incorporated and noted in the summary of changes.

**8.4. Time Limit.** Safety plans will be reviewed at least every three years. Baseline Safety Reports and USAF Test Pilot School standard curriculum event safety plans will be reviewed at least every four years. Teams will identify any new risks and mitigation plans; highlight key issues experienced since approval or the last review; and purge non-applicable guidance from the plan. Teams will document reviews on an AFTC Form 5001 in accordance with **Chapter 6**.

ARNOLD W. BUNCH, Maj Gen, USAF  
Commander

**(EDWARDSAFB)**

MICHAEL T. BREWER, Brigadier General, USAF  
Commander

## Attachment 1

## GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

*References*

**AFI 33-360**, *Publications and Forms Management*, 25 September 2013

**AFI 91-202**, *The US Air Force Mishap Prevention Program*, 5 August 2011

**AFI91-204**, *Safety Investigations and Reports*, 12 February 2014

**AFI 91-202\_AFMCSUP**, *The US Air Force Mishap Prevention Program*, 9 July 2013

**(Added-EDWARDSAFB) EDWARDSAFBI 99-101**, *412 TW Test Plans*, 7 August 2013

**(Added-EDWARDSAFB) EDWARDSAFBI 99-105**, *Test Control and Conduct*, 23 January 2014

**(Added-EDWARDSAFB) EDWARDSAFBI 99-106**, *Test Acceleration/Test Surge*, 19 December 2013

**Prescribed Forms**

AFTC Form 5000 – Test Hazard Analysis

AFTC Form 5001 – Test Project Safety Review

*Abbreviations and Acronyms*

**BHA**—Baseline Hazard Analysis

**BSR**—Baseline Safety Report

**ESR**—Electronic Safety Review

**(Added-EDWARDSAFB) FSR**—Final Safety Review

**GMP**—General Minimizing Procedures

**LDTO**—Lead Developmental Test Organization

**NRR**—Negligible Risk Review

**(Added-EDWARDSAFB) PSL**—Project Safety Lead

**RM**—Risk Management

**SE**—Safety Office

**SOC**—Statement of Capability

**SRB**—Safety Review Board

**SUT**—System Under Test

**TAB**—Test Approval Brief

**TEA**—Test Execution Authority

**THA**—Test Hazard Analysis

**TIS**—Test Information Sheet

**(Added-EDWARDSAFB) TMP**—Test Management Project

**(Added-EDWARDSAFB) TPS**—Test Pilot School

**TRB**—Technical Review Board

**(Added-EDWARDSAFB) TRM**—Technical Review Memorandum

**(Added-EDWARDSAFB) UTSO**—Unit Test Safety Officer

### *Terms*

**Acceptable Risk**— That part of identified risk which is allowed by the managing activity to persist without further engineering or management action.

**Baseline Hazard Analyses (BHA)**— An analysis used to document known hazards concerned with the normal day-to-day operation and maintenance of a test system, subsystem or ground test facility.

**Baseline Safety Report (BSR)**— A compilation of BHAs that constitute the hazards associated with the specific operation of a test system, subsystem or ground test facility and includes a BHA for all systems to be operated or maintained. The BSR allows the individual hazard analyses that make up the baseline to be evaluated in a comprehensive package and thus shows the interaction of the systems and interfaces.

**Control/Safety Measure**— An action taken to eliminate or reduce a potential test hazard to an acceptable risk level.

**Deviation**— The intent of the requirement is not met and a waiver must be approved through the appropriate authority.

**(Added-EDWARDSAFB) Final Safety Review (Added)**— The formal and final review of test safety planning documentation by the independent safety reviewers. Safety reviewers must be independent and approved by 412TW/SET. The outcome of the final safety review is the safety plan and an assessment of the overall risk level of the test.

**General Minimizing Procedure**— Statements that direct a specific action or procedure that mitigates general test execution risk; these generally include the words “will” or “shall”. GMPs are used to address test article restrictions, test build-up, critical parameter monitoring, go-no-go criteria, weather or environmental criteria, and flight test chase requirements among other items of test safety concern.

**Hazard**— Any real or potential condition that can cause injury, illness, or death to personnel; damage to or loss of a system, equipment or property; or damage to the environment. It is the threat of harm and is a precursor state to a mishap.

**Identified Risk**— That risk which has been determined through various analysis techniques.

**Independent Review**— A review by an individual or group that does not have a vested interest in the successful accomplishment of the test objectives and was not directly responsible for the development of the safety plan.

**Mishap**— An unplanned event or series of events resulting in death, injury, occupational illness, or damage to or loss of equipment or property, or damage to the environment.

**Residual Risk**— The remaining mishap risk that exists after all mitigation techniques have been implemented or exhausted, in accordance with the system safety design order of precedence.

**Risk Assessment Consensus**— Unanimous agreement by the safety reviewers on the overall risk assessment. Less than unanimous agreement must be documented in the Final Safety Review Memorandum.

**Risk Level**— An expression of the danger posed by a hazard in terms of the severity of outcome and the probability of occurrence. Risk = Severity x Probability. Risk levels are assigned to both a test event and the test as a whole.

**Risk Management (RM)**— The systematic process of identifying threats/hazards/problems, assessing risk, analyzing risk control options and measures, making control decisions, implementing control decisions, accepting residual risks, and supervising/reviewing the activity for effectiveness.

**Safety Annex**— The safety annex is part of the test plan where all safety planning documentation (i.e. the safety plan) is located.

**Safety Plan**— Safety documentation that details the specific safety criteria and parameters to allow safe conduct of a test. The safety plan can identify targets, munitions, aircraft, and other equipment to be used; defines danger areas; identifies the potential hazards associated with the test; and establishes the specific safety requirements necessary to conduct the test, such as special handling, flight termination systems, surveillance requirements, communication requirements, etc.

**Safety Review Board**— A formal safety review meeting chaired by Wing or Complex Chief of Test Safety or delegate and consisting of independent reviewers as voting members. The meeting is also supported by appropriate project personnel. The product of an SRB is an independently reviewed safety plan and proposed overall risk level of the test for consideration by the TEA.

**Safety Reviewers**— An independent panel of subject knowledgeable individuals that review the test and associated safety plan to ensure test hazards are identified; then eliminated, minimized or controlled to an acceptable level; and to establish the overall risk level. As a safety reviewer, the individual is acting on behalf of the AFTC senior leadership. As a minimum, the safety reviewer panel will be composed of a technical and operations representative who will review the test package. Technical representatives are chosen based on their experience and expertise in the engineering discipline(s) associated with the test activity to be reviewed. Operations representatives are chosen based on their test and operations experience in similar test activities.

**Senior Leadership**— Collective reference to the various Operations Group, Test Wing, Test Complex, and AFTC authorities who coordinate, approve, and review test packages.

**Test and Evaluation (T&E)**—The act of generating empirical data during the research, development or sustainment of systems, and the creation of information through analysis that is useful to technical personnel and decision makers for reducing design and acquisition risks. The process by which systems are measured against requirements and specifications, and the results analyzed so as to gauge progress and provide feedback.

**Test Execution Authority (TEA)**— Senior leader who approves the test package.

**Test Hazard Analysis (THA)**— A document that identifies test hazards, causes, and effects and establishes controls which are used to determine risk level. For AFTC test programs, test hazard analysis will be documented on an AFTC Form 5000.

**Test Organization/Unit**— The organization or unit providing the test facilities, equipment or personnel to conduct a test. The test article may or may not be a resource of the test organization/unit. Also known as the test executing organization (TEO).

**Test Organization/Unit Commander**— The highest ranking individual at the test organization or unit (commander or director). This individual has responsibility for the personnel, equipment and/or facilities for accomplishing the test, and is the individual responsible for reporting mishaps involving the test article or the facilities.

**Test Package**— As a minimum, the test package includes the test plan, safety plan, and any other appendices or documentation that support the test planning.

**Test Plan**— The test plan describes the system under test, defines the test objectives and outlines the test methodology in sufficient detail to demonstrate technical adequacy and execute a technically effective test program.

**Test Safety**— The application of engineering and management principles, criteria, and techniques to optimize all aspects of safety within the constraints of operational effectiveness, time and cost throughout the defined test cycle.

**Test Safety Office**— The division in the safety office that reports directly to the Chief of Safety and is responsible for the implementation and management of the locally developed test safety review process.

**Test Unique Hazards**— Hazards that are a result of the specific test being accomplished and not present in the normal operational hazards associated with the system or environment. These hazards include those inherent to the article being tested as well as those hazards associated with the initial testing of any new system.

**Unacceptable Risk**— That risk which cannot be tolerated by the managing activity. It is a subset of identified risk. Unacceptable risk is either eliminated or controlled.

**Variation**— The intent of the requirement is expected to be met.

**Waiver**— Approval from the appropriate authority to deviate from both the intent and the letter of the requirement.

## Attachment 2 (Added-EDWARDSAFB)

### TEST PACKAGE AND SAFETY PLAN INSTRUCTIONS - INITIAL OR AMENDMENT

**A2.1. (EDWARDSAFB) Use.** The safety plan introduces and summarizes the test, documents the safety planning, records the proceedings of the safety review and provides a vehicle by which the 412 TW senior leadership gives the final concurrence and approval to conduct the test.

**A2.2. (EDWARDSAFB) Test Package Layout.**

A2.2.1. (EDWARDSAFB) The test package is typically arranged with the layout shown in Table A2.1. Amendments to the initial test package are arranged IAW Table A2.2. If the package is electronic, all files need to be uploaded to the SET SharePoint site and labelled appropriately. If the package is physical, a 3-ring binder with clearly divided and labeled sections should be used.

**Table A2.1. Initial Test Package Layout**

DOCUMENT	BINDER LOCATION
Project Title and Control #	Cover of Binder
AFTC Form 5001	Front Matter of Binder
Coordination Comments	
Final Safety Review Memorandum	
(Leave Empty)	Tab 1
Technical Review Memo	Tab 2
Test Plan/Training Plan	Tab 3
Safety Annex	Tab 4
Supporting Documentation	Tabs as required

**Table A2.2. Test Package Amendment Layout**

DOCUMENT	BINDER LOCATION
Project Title and Control #	Cover of Binder
AFTC Form 5001	Front Matter of Binder
Coordination Comments Sheet	
Final Safety Review Memorandum	
Previously Approved 5001s	Tab 1
Technical Review Memo	Tab 2
Test Plan/Training Plan	Tab 3
Safety Annex (Amended)	Tab 4
Supporting Documentation	Tabs as required

A2.2.2. **(EDWARDSAFB)** AFTC Form 5001, *Test Project Safety Review*. The UTISO will ensure that the most current AFTC Form 5001 version published is used prior to submission.

A2.2.2.1. **(EDWARDSAFB)** Section I – Project Information. This section documents general project information and signatures of the personnel performing the test unit level safety review.

A2.2.2.2. **(EDWARDSAFB)** Section II – Safety Reviewer Members. This section documents the signatures of safety reviewers who perform the final safety review.

A2.2.2.3. **(EDWARDSAFB)** Section III – Coordination and Approval. This section documents the signatures of officials who coordinate, approve or are informed on the test package. The appropriate Coord-Approve-Info action should be entered for each signatory in Section III based upon the risk level and package type (original or amendment). See Attachment 11 for additional details.

A2.2.3. **(EDWARDSAFB)** Coordination Comments. This section is located immediately after the AFTC Form 5001 and allows space for coordination comments to be recorded along with their responses. All coordination comment correspondence should be maintained in chronological order, with the newest comments on top.

A2.2.4. **(EDWARDSAFB)** Final Safety Review Memorandum. This memorandum for record is written by 412 TW/SET and submitted to the PSL for inclusion in the safety plan. The memorandum documents the type of final safety review performed, the safety review synopsis, the minutes of the safety review (if applicable), any action items assigned with project responses and the risk assessment.

A2.2.5. **(EDWARDSAFB)** Tab 2 must include a Technical Review Memorandum (TRM) that documents the outcome of a technical review IAW EDWARDSAFBI 99-101. The expectation is that the test plan is being reviewed for technical adequacy while the team is



finalizing their draft safety planning, such that both finalized pieces can be assembled into the test package. For a test in which 412 TW has no technical responsibility, Tab 2 must include a statement from the 412 TW/CT (or equivalent) stating that the test is an appropriate use of 412 TW resources.

A2.2.6. **(EDWARDSAFB)** Tab 3 must include the test or training plan

A2.2.7. **(EDWARDSAFB)** Tab 4 - Safety Annex.

A2.2.7.1. **(EDWARDSAFB)** Project Description. This section presents test project information considered during the safety review. It includes the background, test objectives, test item description, system maturity, predicted/expected results, types of tests, differences from previous tests and project scope information. The first page(s) in the safety plan gives a summary of changes since the original safety plan approval.

A2.2.7.2. **(EDWARDSAFB)** Safety Plan. This section includes the mishap accountability statement, qualification and training requirements, test article restrictions, special considerations, GMPs and THAs.

A2.2.8. **(EDWARDSAFB)** Supportive documents should be attached in Tabs 5 and following (engineering analysis/predictions, flight clearance or approval, results from previous testing, waivers, etc.).

### **A2.3. (EDWARDSAFB) Preparation.**

A2.3.1. **(EDWARDSAFB)** The test team is responsible for the completion of the AFTC Form 5001 and Safety Plan. Clarity, conciseness, completeness and accuracy are the essential elements of a well written safety plan regardless of the format chosen. Cutting and pasting non relevant parts of the test plan verbatim is frowned upon. Summarize only the pertinent parts of the test from a safety perspective. Typically, the safety plan is finished before completing the AFTC Form 5001. Templates and examples of 412 TW safety planning and applicable information to include in each section can be found at the SET SharePoint site or by contacting 412 TW/SET.

A2.3.2. **(EDWARDSAFB)** UTSO Check. After the test team has completed a draft of the safety plan, an UTSO should review it. This will ensure the test team gets the benefits of the latest safety guidelines and completes the safety planning and documentation IAW AFTCI 91-203 and this supplement. The UTSO will not sign the AFTC Form 5001 until they are comfortable that the safety planning is sufficient and meets AFTCI 91-203, Edwards AFB Supplement requirements.

**Attachment 3 (Added-EDWARDSAFB)****INSTRUCTIONS FOR USE OF THE CONTINUATION AMENDMENT**

**A3.1. (EDWARDSAFB) Use.** The continuation amendment is an E-mail-based amendment used to notify 412 TW/SET that the existing safety planning is sufficient and valid for continued testing and primarily to collect any lessons learned to pass on to other programs and build corporate knowledge. A continuation amendment is required annually for each active test package on the anniversary of the initial approval date or the approval date of the most recent continuation amendment.

**A3.2. (EDWARDSAFB) Preparation.** An example of the continuation amendment is available from the 412 TW/SET SharePoint site or by contacting 412 TW/SET. The UTSO will ensure that the most current published version is used prior to submission.

**A3.3. (EDWARDSAFB) Test Unit Review.** The PSL and UTSO will review the existing safety planning and E-mail documentation before submitting the amendment to 412 TW/SET.

**A3.4. (EDWARDSAFB) Continuation Amendment Submission.** The UTSO or PSL will send the amendment to the 412 TW/SET organizational inbox for processing. 412 TW/SET will review the amendment for any lessons learned and contact the UTSO if questions or comments arise.

**A3.5. (EDWARDSAFB) Response to the Continuation Amendment.** After 412 TW/SET has completed processing the amendment, a response E-mail will be sent to the UTSO. The UTSO will insert the amendment into the test package in Tab 1. The UTSO will also update the summary of changes in the safety plan.

**Attachment 4 (Added-EDWARDSAFB)****INSTRUCTIONS FOR USE OF THE CLOSURE AMENDMENT**

**A4.1. (EDWARDSAFB) Use.** The closure amendment is an E-mail-based amendment used to notify 412 TW/SET to close existing safety planning. The closure amendment also documents lessons learned during and/or after the conclusion of the test program. A well-written closure amendment will close the loop on a test package and help future researchers benefit from lessons learned during testing and pertinent information that the test team would have liked to know at the beginning of the test program. Once a closure amendment has been processed, the test package is closed and cannot be reopened.

**A4.2. (EDWARDSAFB) Preparation.** An example of the closure amendment is available from the 412 TW/SET SharePoint site or directly through the office. The UTSO will ensure that the most current version published on the 412 TW/SET SharePoint site is used prior to submission.

**A4.3. (EDWARDSAFB) UTSO Review.** An UTSO will review the E-mail before submitting the amendment to 412 TW/SET.

**A4.4. (EDWARDSAFB) Closure Amendment Submission.** The UTSO will send the amendment to the 412 TW/SET organizational inbox for processing. 412 TW/SET will review the amendment for any lessons learned and contact the UTSO if questions or comments arise.

**A4.5. (EDWARDSAFB) Response to the Closure Amendment.** After 412 TW/SET has completed processing the amendment, a response E-mail will be sent to the UTSO. The UTSO will insert this E-mail and a copy of the amendment into the original test package. The test package is then considered closed and should be removed from the active test package library.

**Attachment 5 (Added-EDWARDSAFB)****FINAL SAFETY REVIEW PHASE**

**A5.1. (EDWARDSAFB) Final Safety Review Prerequisites.** The Final Safety Review phase begins when the test and safety documentation is released to the safety reviewers. To assure the test package is ready for their review, all final safety review prerequisites must be completed before the documentation can be released to the safety reviewers. The final safety review prerequisites are: A request for FSR E-mail, AFTC Form 5001 Section I signatures completed and a signed TRM (except in the case of a combined TRB/SRB).

A5.1.1. **(EDWARDSAFB) Request for Final Safety Review (FSR) E-mail.** Teams must notify 412 TW/SET of their desire to begin the formal safety review process for all initial and amendment safety reviews. A form E-mail, called the Request for FSR, is used to communicate important project details and is available on the 412 TW/SET SharePoint site. The PSL should send the Request for FSR E-mail to 412 TW/SET at least 50 calendar days prior to the date the team plans to start testing. 412 TW/SET will review the Request for FSR E-mail and provide a control number for the test package.

A5.1.2. **(EDWARDSAFB) Test Unit Final Review and Signatures.** To ensure mature test and safety planning is released for the final safety review, all Section I signatories on the AFTC Form 5001 will sign after reviewing the documentation signifying that the test package is ready for final safety review. The following signatures are required prior to releasing the test package to the safety reviewers:

A5.1.2.1. **(EDWARDSAFB) PSL**

A5.1.2.2. **(EDWARDSAFB) UTSO**

A5.1.2.3. **(EDWARDSAFB) Project Pilot or applicable aircrew**

A5.1.2.4. **(EDWARDSAFB) Test Unit Chief Engineer or Technical Director**

A5.1.2.5. **(EDWARDSAFB) Test Unit Commander** *Note:* For USAF Test Pilot School student Test Management Projects (TMPs), see signature exception in paragraph A10.3.2.

**A5.2. (EDWARDSAFB) Release of Documentation to Reviewers.** After all final safety review prerequisites are completed, the PSL is allowed to release the test package documentation to the Section II safety reviewers, which includes the SRB Chairman (or the 412 TW/SET POC for Electronic Safety Reviews). The release of documentation begins the final safety review, which will be conducted based on the type of safety review, as defined in Attachment 6 or 7.

**A5.3. (EDWARDSAFB) Risk Assessments.** During the final safety review, the overall risk of the test or activity will be assessed by the safety reviewers according to the direction found in Attachment 6.

## Attachment 6 (Added-EDWARDSAFB)

## SAFETY REVIEW BOARD (SRB)

## A6.1. (EDWARDSAFB) Schedule.

A6.1.1. (EDWARDSAFB) The SRB will occur after the chairman ensures the final safety review prerequisites have been completed (Section A5.1).

A6.1.2. (EDWARDSAFB) The test team will deliver a copy of the test package, signed IAW A5.1.2 or A10.3.2, to the SRB chairman and all safety reviewers at least 3 working days prior to the meeting; 5 working days are recommended. A typical timeline for completing the final safety review with an SRB is shown in Table A6.1.

A6.1.3. (EDWARDSAFB) Additional safety reviewer preparation time may be required for large and/or complex test packages. In such situations, the test team will coordinate with 412 TW/SET and the safety reviewers to ensure their planned timeline is realistic and attainable.

Table A6.1. Recommended Event Timeline for Test Package with SRB1

CALENDAR DAYS PRIOR TO TEST START	TASK OR EVENT
50	Submit FSR Request
45	Release Documentation ; <i>Start of Final Safety Review Phase</i>
40	Conduct SRB
38	Confirm Action Items with 412TW/SET
34	Resolution and Closure of Action Items; Obtain Section II signatures
26	Submit Test Package to 412TW/SET ; <i>Start of Approval Phase</i>
21-7	Test Package Approved
<sup>1</sup> Timeline varies greatly depending on test size and complexity, risk level, and test team effort and preparation.	

## A6.2. (EDWARDSAFB) SRB Preparation. The PSL will:

A6.2.1. (EDWARDSAFB) Coordinate with the approved safety reviewers and the chairman to ensure all participants are available and informed of the time, date, location and duration of the SRB. The duration of an SRB is primarily dependent on test team and reviewer preparedness, quality of the documentation and the complexity of the test procedures. SRBs should normally be scheduled in the morning to allow for potential meeting delays.

A6.2.2. (EDWARDSAFB) Arrange availability of the meeting location, computer, projector, call-in numbers and other equipment, facility, aids, etc. Obtain the 412 TW/SET briefing slides.

A6.2.3. (EDWARDSAFB) Prepare a briefing that describes pertinent aspects of the test project to the safety reviewers and chairman. As a minimum, this briefing should follow the

SRB Project Briefing template found at the 412 TW/SET SharePoint site or by contacting 412 TW/SET.

**A6.3. (EDWARDSAFB) SRB Attendance.** Personnel tasked to attend an SRB will ensure they are available for the planned duration of the meeting. If required personnel are absent, the SRB chairman may postpone the SRB.

A6.3.1. **(EDWARDSAFB)** Test project personnel need to present the test package and answer such questions as may be reasonably expected. As a minimum, knowledgeable aircrew, PSL, test/project engineer(s) and a scribe must be in attendance. The scribe will take meeting minutes and document action items, as necessary. Contractor system design specialists and/or cognizant engineers should be present or available to answer questions.

**A6.4. (EDWARDSAFB) Conduct of the SRB.** The following items typically characterize the flow of the SRB review and risk assessment proceedings. The chairman is responsible for the SRB and has the discretion to alter the order and flow of the review.

A6.4.1. **(EDWARDSAFB)** Opening Remarks, Introductions and Expectations - SRB chairman.

A6.4.2. **(EDWARDSAFB)** Project Briefing. The test team is responsible for providing this briefing. It is expected that safety reviewers will ask questions in an attempt to clearly understand the intent of the test team and to uncover any potential hazards or safety issues that were not previously identified.

A6.4.3. **(EDWARDSAFB)** Test Plan Review. The review should focus on understanding the test methodology from a safety perspective. Safety reviewers will refrain from questioning the technical adequacy of the test plan. The test plan has already obtained a technical adequacy letter from the appropriate technical authorities.

A6.4.4. **(EDWARDSAFB)** Safety Annex Review. The safety documentation initially released to the safety reviewers will be thoroughly reviewed. The safety plan should be clear and understandable. The safety reviewers will review the THAs with the test team, make recommendations to change, add, or remove THAs as appropriate, make comments to the THAs and determine the appropriate hazard severity and probability for each THA. Likewise, the GMPs are examined and revised as appropriate. Action items may be assigned to the test team by the chairman for significant test safety planning issues that cannot be resolved during the SRB. These issues warrant further research for resolution and may involve other personnel or agencies not present at the SRB. If significant changes are made to the safety planning, the SRB chairman has the discretion to reconvene the SRB to resolve any outstanding issues.

A6.4.5. **(EDWARDSAFB)** Additional Test Related Documentation Review. Any additional test related documentation will be reviewed by the test team as necessary (including modeling data, airworthiness documents, waivers, etc.).

A6.4.6. **(EDWARDSAFB)** Risk Assessment. After the Safety Annex review is complete, the safety reviewers and chairman will deliberate and assess the test risk (Chapter 3). The Board may ask the test team additional questions. If appropriate, the risk may be assessed separately for:

A6.4.6.1. **(EDWARDSAFB)** 412 TW and non-412 TW assets.

A6.4.6.2. **(EDWARDSAFB)** Different phases of the test program.

A6.4.6.3. **(EDWARDSAFB)** Individual test events.

A6.4.7. **(EDWARDSAFB)** Safety Reviewer Poll. The SRB chairperson will poll the reviewers for their risk assessment and tally the results for consensus determination. If a consensus on the risk assessment is not reached, the chairperson makes the final risk assessment, although the lack of consensus and justification for the dissenting risk assessment will be documented in the risk assessment paragraph in the Final Safety Review Memorandum.

A6.4.8. **(EDWARDSAFB)** Review of SRB Proceedings and Assignment of Action Items. The scribe will review all action items assigned during the SRB, along with the name of the person requesting the change or information. Changes agreed to by the test team at the SRB do not warrant the assignment of an action item. A responsible person will be tasked to answer each action item.

**A6.5. (EDWARDSAFB) Post-SRB Activity.** Depending on personnel availability, the magnitude of the issues to be worked and test priority, the post-SRB period can vary substantially. Close and persistent coordination between the PSL, the safety reviewers, and the SRB chairman is necessary to complete the following:

A6.5.1. **(EDWARDSAFB)** Corrections to the safety plan or updates as identified at the SRB.

A6.5.2. **(EDWARDSAFB)** Confirm Action Items with 412 TW/SET. The scribe will provide the SRB minutes and action items to the SRB chairman within two working days after the SRB. The chairman will confirm that the action item descriptions properly reflect the actions discussed during the SRB and publish the action items via a draft of the final safety review memorandum.

A6.5.3. **(EDWARDSAFB)** Resolution and Closure of Action Items. Test team personnel will coordinate all action item responses and requests for closure with the safety reviewers and the SRB chairman. The SRB chairman, in coordination with the respective safety reviewer, is the final authority for determination of action item closure and will respond to the test team indicating whether each action item response is acceptable and that the action item can be closed. Open action items may hinder a risk assessment and may prevent test points from being approved for execution.

A6.5.4. **(EDWARDSAFB)** Final Test Package Preparation and Coordination. Once all actions items are closed:

A6.5.4.1. **(EDWARDSAFB)** Obtain the Final Safety Review Memorandum from the SRB chairman and insert into the test package. Changes to the Final Safety Review Memorandum will only be made by 412 TW/SET.

A6.5.4.2. **(EDWARDSAFB)** Assemble the test package according to Table A2.1 or Table A2.2 for amendments. (Sending an electronic read-ahead copy of the corrected test package to the safety reviewers and 412 TW/SET is quite useful in speeding up the post-SRB final coordination process).

A6.5.4.3. **(EDWARDSAFB)** Before proceeding into the approval phase, the test unit commander, at a minimum, should be notified of any significant changes to safety

planning generated by the safety review, or of any significant coordination comments to the test package. Consideration should be given to notifying all AFTC Form 5001 Section I reviewers.

A6.5.4.4. **(EDWARDSAFB)** Circulate the test package for safety reviewer coordination and signature on the AFTC Form 5001. A digitally signed E-mail of concurrence from board members may be used for signature. To utilize this signature process, the board member must state that he or she does not need to review the test package and is satisfied with the changes and team responses. This E-mail must be sent to all board members and 412 TW/SET. Once the package has been delivered to 412 TW/SET to start the approval phase, the SRB chairman will note on the AFTC Form 5001 for that board member—signed via E-mail and initialed.

A6.5.4.5. **(EDWARDSAFB)** Safety reviewer coordination comments are used to communicate pertinent safety related concerns to the approval authorities or to document a dissenting risk assessment. These comments by the safety reviewers will be documented in the coordination comments section of the test package. The test team will provide written responses for all coordination comments unless the commenting official indicates no response is necessary.

A6.5.4.6. **(EDWARDSAFB)** The PSL and safety reviewers (along with 412 TW/SET) will attempt to resolve a question or issue before resorting to the use of a coordination comment. If a safety reviewer still disagrees with the final determination of the SRB chairman and/or the test team as to the contents of the test package, the reviewer must still sign in AFTC Form 5001, Section II. A signature in Section II indicates participation in the SRB and not necessarily concurrence with the final outcome, although with no unresolved coordination comments it indicates both.

**A6.6. (EDWARDSAFB) Coordination and Approval.** After all safety reviewers have signed, the test package is delivered to 412 TW/SET to begin the approval phase (detailed in Chapter 6). The SRB chairman reviews and signs in Section II on AFTC Form 5001 when all action items and coordination comments are responded to and the package is in compliance with this instruction. After 412 TW/SET signs in Section II and 412 TW/SE signs in Section III on AFTC Form 5001, the test package is picked up by test team personnel and delivered to the next signatory indicated in Section III.



## Attachment 7 (Added-EDWARDSAFB)

## ELECTRONIC SAFETY REVIEW

## A7.1. (EDWARDSAFB) Schedule.

A7.1.1. (EDWARDSAFB) A recommended timeline for planning purposes is included in Table A7.1. An electronically reviewed test package timeline should begin at the same point as a test package with an SRB in case the SRB becomes necessary.

A7.1.2. (EDWARDSAFB) The Electronic Safety Review will occur after 412 TW/SET has ensured the final safety review prerequisites have been completed (paragraph A5.1). A test unit commander signed copy of the test package documentation is then released to the 412 TW/SET POC and approved safety reviewers.

A7.1.3. (EDWARDSAFB) Within 3-5 working days after release of final documentation, each safety reviewer will complete the review of the test package in parallel and provide comments or recommended changes to the PSL. Coordination can be accomplished by hosting the files on the 412 TW/SET SharePoint site or sending the electronic files via E-mail. Additional safety reviewer time may be necessary for larger and more complex test packages. In such situations, the test team will coordinate with the 412 TW/SET POC and the safety reviewers to ensure their planned timeline is realistic and attainable.

**Table A7.1. (EDWARDSAFB) Recommended Event Timeline for Electronically Reviewed Test Package<sup>1</sup>**

CALENDAR DAYS PRIOR TO TEST START	TASK OR EVENT
50	Submit FSR Request
30	Release Documentation (paragraph A5.2); <i>Start of Final Safety Review Phase</i>
25	All Comments by Safety Reviewers Received by PSL
19	Submit Test Package to 412TW/SET ; <i>Start of Approval Phase</i>
14-7	Test Package Approved
<sup>1</sup> Timeline variation usually less than for an SRB test package.	

**A7.2. (EDWARDSAFB) Test Package Review.** The safety reviewers will thoroughly review the test package. Safety reviewers will refrain from questioning the technical adequacy of the test plan. The test plan has already obtained a technical adequacy letter from the appropriate technical authorities. Close and persistent communication between the PSL, safety reviewers and 412 TW/SET is necessary to complete the following:

A7.2.1. (EDWARDSAFB) Test Package Comments and Corrections. The safety reviewers will provide comments and recommended changes to the PSL, other safety reviewers and 412 TW/SET. The PSL will ensure test team personnel provide requested information to the safety reviewers and address any safety plan changes recommended by the safety reviewers.

In addition, the PSL is responsible for ensuring each safety reviewer is aware of comments and changes recommended by any other reviewer along with the test team responses.

**A7.2.2. (EDWARDSAFB) Issue Resolution.** All change recommendations and issues should be resolved in this stage of the review. Open issues may hinder a risk assessment and may prevent test points from being approved for execution. Unlike an SRB, action items normally are not appropriate for an Electronic Safety Review since issues are generally resolved during the review and coordination process before concluding the review.

**A7.2.3. (EDWARDSAFB) Coordination Meeting.** If a disagreement arises concerning recommended corrections to the test package, or if the safety reviewers have a differing risk assessment, 412 TW/SET may require a coordination meeting between the test team and the safety reviewers to resolve the issue(s). If the issue(s) remains unresolved, it will be documented in a coordination comment by the safety reviewer and/or discussed in the Final Safety Review Memorandum section of the test package.

**A7.2.4. (EDWARDSAFB) Risk Assessment.** After the test package review is complete and all corrections have been accomplished, the safety reviewers will assess the test risk level (Chapter 3) and may consult with each other and 412 TW/SET to arrive at a risk assessment. The risk level may be adjusted based upon expected/predicted results or the absence of predictive data and the discretion of the safety reviewers. If appropriate, the risk may be assessed separately for:

**A7.2.4.1. (EDWARDSAFB)** 412 TW and non-412 TW assets.

**A7.2.4.2. (EDWARDSAFB)** Different phases of the test program.

**A7.2.4.3. (EDWARDSAFB)** Individual test events.

**A7.3. (EDWARDSAFB) Final Test Package Preparation and Coordination.** Once the test package revisions are complete, the PSL will:

**A7.3.1. (EDWARDSAFB)** Obtain the Final Safety Review Memorandum from 412 TW/SET and insert into the test package. Any changes to the Final Safety Review Memorandum must be approved by 412 TW/SET.

**A7.3.2. (EDWARDSAFB)** Assemble the test package according to Table A2.1 or Table A2.2 for amendments.

**A7.3.3. (EDWARDSAFB)** Notify the test unit commander at a minimum of any significant changes to safety planning generated by the safety review, or of any significant coordination comments to the test package, before proceeding into the approval phase. Consideration should be given to notifying all Section I reviewers.

**A7.3.4. (EDWARDSAFB)** Circulate the test package for safety reviewer coordination and signature. Obtain the reviewer's signatures on AFTC Form 5001. A digitally signed E-mail of concurrence from board members may be used for signature. To utilize this signature process, the board member must state that he or she does not need to review the actual test package binder and is satisfied with the changes and team responses. This E-mail must be sent to all of the board members and 412 TW/SET. Once the package has been delivered to 412 TW/SET to start the approval phase, the 412 TW/SET POC will note on AFTC Form 5001 for that board member —signed via E-mail and initialed.

A7.3.5. **(EDWARDSAFB)** Document any coordination comments by the safety reviewers in the test package. Coordination comments are used to express dissent for inadequately covered topics in the Review Synopsis, or to document a dissenting risk assessment. The PSL and safety reviewers will attempt to resolve a question or issue before resorting to the use of a coordination comment. The main purpose of a coordination comment is to communicate pertinent safety related concerns that are not addressed in the test package to the approval authorities. The test team will provide written responses for all coordination comments unless the commenting official indicates no response is necessary.

A7.3.6. **(EDWARDSAFB)** All Section II reviewers must sign the AFTC Form 5001 regardless of whether they agree with the final risk assessment. A signature in AFTC Form 5001 Section II indicates participation in the review process and not necessarily concurrence with the final outcome, although with no unresolved coordination comments it indicates both.

**A7.4. (EDWARDSAFB) Coordination and Approval.** After all safety reviewers have signed, the test package is delivered to 412 TW/SET to begin the approval phase (detailed in Chapter 6). 412 TW/SET reviews and signs in Section III on AFTC Form 5001 when all coordination comments are answered and the test package is in compliance with the instruction.

**Attachment 8 (Added-EDWARDSAFB)****NEGLIGIBLE RISK REVIEW (NRR)**

**A8.1. (EDWARDSAFB) General.** Major differences between the NRR and formal safety review process (such as SRB or ESR) include the following:

A8.1.1. **(EDWARDSAFB)** The 412 TW NRR process is entirely E-mail based and follows a unique template for safety planning and review.

A8.1.2. **(EDWARDSAFB)** The formal safety review is completed by 412 TW/SET.

A8.1.3. **(EDWARDSAFB)** The test unit commander is the approving official for the Negligible Risk test activity after concurrence from the 412 TW/CT (or designee) and 412 TW/SET.

A8.1.4. **(EDWARDSAFB)** NRR documentation is not amendable. If a change to test methodology occurs after NRR approval, the project must submit a new NRR.

A8.1.5. **(EDWARDSAFB)** NRR documentation is managed at the test unit level. The primary UTSO will develop an in-house tracking system for NRRs according to paragraph A8.6.

**A8.2. (EDWARDSAFB) NRR Coordination and Qualification Criteria.** A technical adequacy assessment is required prior to requesting NRR coordination and approval. The PSL will coordinate with a project operations representative, UTSO, Chief Engineer and 412 TW/SET POC to determine if the test planning meets the NRR criteria. This determination will be made 50 calendar days prior to test execution to avoid delays if a formal safety review is required. 412 TW/SET will make the final determination based on the criteria in 5.6.1. Activities that do not qualify for an NRR must use a formal safety review such as SRB or ESR.

**A8.3. (EDWARDSAFB) NRR Prerequisites.** The following must be completed before beginning the NRR review cycle:

A8.3.1. **(EDWARDSAFB)** The test activity will be adequately defined and documented (e.g., test plan, test procedures, test information sheets, etc).

A8.3.2. **(EDWARDSAFB)** Technical reviews will be complete and a letter affirming technical adequacy of the test obtained. For projects where the 412 TW has no evaluation or technical responsibilities, confirmation that testing constitutes a reasonable use of 412 TW resources will be provided.

**A8.4. (EDWARDSAFB) Document Preparation.** Once agreement is reached to use the negligible risk review, safety documentation will be prepared using the NRR document. An example, along with the document completion instructions, can be found on the 412 TW/SET SharePoint site or by contacting 412 TW/SET. The UTSO will ensure that the most current version published on the 412 TW/SET SharePoint site is used prior to submission.

A8.4.1. **(EDWARDSAFB)** All sections will be completed by project personnel except for the Concurrence and Approval Authority sections.

A8.4.2. **(EDWARDSAFB)** After a draft of the NRR form has been completed, a review by an UTSO, the project operations representative and the 412 TW/SET POC will confirm that the test activity is accurately defined, all test hazards are identified and sufficiently mitigated

and the NRR clearly and adequately provides enough information to support an approval decision.

**A8.5. (EDWARDSAFB) Review, Concurrence and Approval.** Figure A8.1 depicts the E-mail coordination flow for NRR concurrence and approval.

**A8.5.1. (EDWARDSAFB) 412 TW/SET Review.** 412 TW/SET will review the NRR information to ensure that it meets the intent of an NRR and is ready for coordination cycle. 412 TW/SET will notify PSL that the NRR is ready for coordination cycle.

**A8.5.2. (EDWARDSAFB) 412 TW/CT Concurrence.** The PSL will send the NRR E-mail request to the 412 TW/CT. The E-mail request will include the NRR document, test planning documentation and technical review memorandum. The 412 TW/CT will review the NRR information and make a concurrence decision.

**A8.5.2.1. (EDWARDSAFB) Concur:** 412 TW/CT (or designee) will add his/her name, rank and date of concurrence to NRR document and will then forward the E-mail to 412 TW/SET for concurrence.

**A8.5.2.2. (EDWARDSAFB) Nonconcur:** 412 TW/CT will reply to all with comments and concerns. The NRR will not go forward until all 412 TW/CT concerns have been resolved by project personnel.

**A8.5.3. (EDWARDSAFB) 412 TW/SET Concurrence.** 412 TW/SET will review the NRR information and will make a concurrence decision.

**A8.5.3.1. (EDWARDSAFB) Concur:** 412 TW/SET member will add his/her name, rank and date of concurrence to the NRR document and will then forward the E-mail to the test unit commander for approval with the updated NRR document attached.

**A8.5.3.2. (EDWARDSAFB) Nonconcur:** 412 TW/SET member will reply to all with comments and concerns. The NRR will not go forward until 412 TW/SET concerns have been resolved by project personnel. If 412 TW/SET determines that the test activity is not NRR eligible, a formal safety review must be conducted.

**A8.5.4. (EDWARDSAFB) Project personnel** should allow at least three working days for the NRR review. The PSL should be proactive and follow-up on the NRR status to avoid delays typically experienced in E-mail correspondence.

**A8.5.5. (EDWARDSAFB) Unit Commander Approval.** The test unit commander will be the approval authority for all NRR activities.

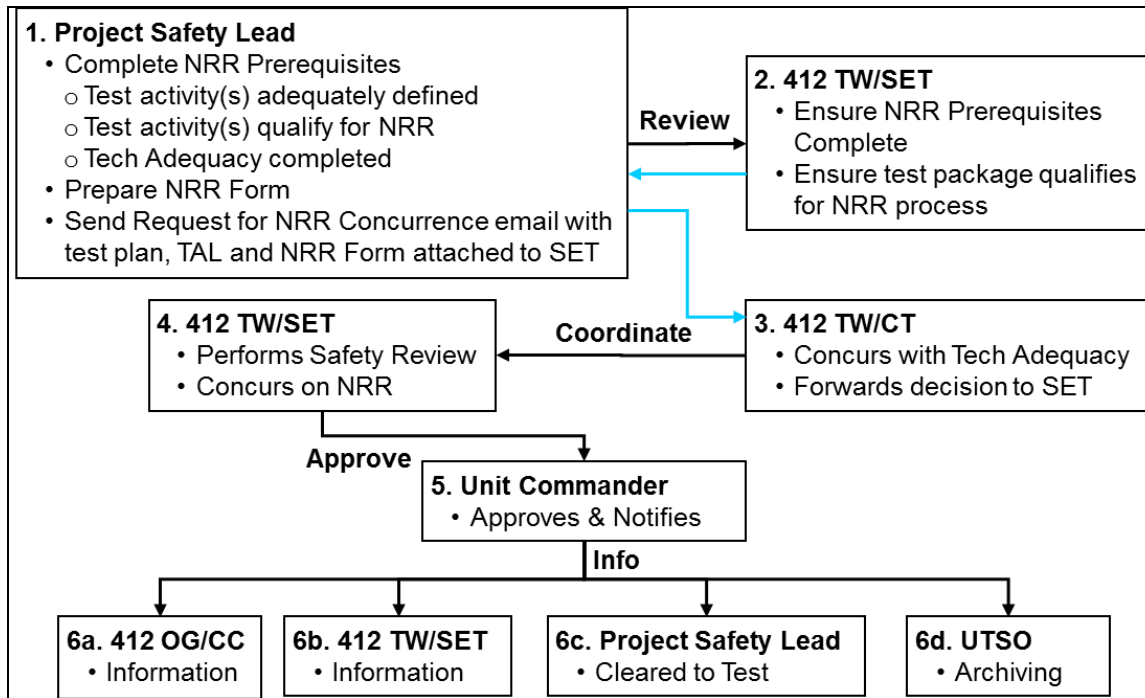
**A8.5.5.1. (EDWARDSAFB) Approve:** The test unit commander will electronically update the NRR document with his/her name, rank and date of approval. The NRR Request for Concurrence and Approval E-mail will then be forwarded for informational purposes to 412 OG/CC, 412 TW/SET, PSL and UTSO with all attachments included.

**A8.5.5.2. (EDWARDSAFB) Disapprove:** The test unit commander will reply to all with reason for disapproval.

**A8.5.6. (EDWARDSAFB) Post-Approval Comments.** If an information official has a comment or concern affecting test conduct, they must immediately notify project personnel to resolve the issue. If the issue cannot be resolved upon initial notification, the project will

cease testing until all concerns have been resolved. Post-approval comments should include all persons involved in the E-mail NRR process.

**Figure A8.1. (EDWARDSAFB) NRR E-mail Coordination and Approval Flow**



**A8.6. (EDWARDSAFB) NRR Library.** Each test unit utilizing the NRR process will develop and maintain an NRR library with a tracking system to manage approved and active NRRs. The test unit's primary UTSO is responsible for maintaining their unit's NRR library and tracking system.

**A8.6.1. (EDWARDSAFB)** The library may be electronic or paper; however, the UTSO must be able to locate approved and active NRRs.

**A8.6.2. (EDWARDSAFB)** NRRs are considered active for one year from the date of approval. The test unit commander can extend the approval to a total of two years with an E-mail to 412 OG/CC, 412 TW/SET, PSL and UTSO. Inactive NRRs will be removed from the active archive and stored appropriately.

**Attachment 9 (Added-EDWARDSAFB)****TEST PACKAGE AMENDMENT PROCEDURES**

**A9.1. (EDWARDSAFB) Documentation Methods.** There are four methods that may be used to document and coordinate changes to a test package. Document selection is dependent on the nature of the change with an emphasis on whether additional or modified safety planning is required. In all cases, the overall objective is to provide the test team with a single source document that incorporates all changes to safety planning up to that date to ensure accurate mission preparation and briefing.

A9.1.1. **(EDWARDSAFB) Test Package Amendment.** This amendment is used to document any potential change in risk level (higher or lower), addition of new test plans, major test plan changes, changes to safety planning and unusual events.

A9.1.2. **(EDWARDSAFB) Memorandum Amendment.** This method employs a memorandum for record format to document minor test plan changes that typically require no changes to safety planning. Review and coordination is E-mail based with approval delegated to the test unit commander (or equivalent). It is critical that the test team and 412 TW/SET, in coordination with an appropriate technical reviewer, agree that a memorandum is appropriate.

A9.1.3. **(EDWARDSAFB) E-mail Amendment.** Allows test teams to request a 1-year continuation or initiate closure of a test package using an E-mail format. Lessons learned will be documented. Review and approval is delegated to 412 TW/SET. See Attachment 3 (Continuation) and Attachment 4 (Closure) for further information.

A9.1.4. **(EDWARDSAFB) Administrative Change.** Clarifies information contained in the package that does not affect test conduct or safety planning.

**Table A9.1. (EDWARDSAFB) Change Documentation, Categories, and Approval Authority**

Documentation Method <sup>1</sup>	Change Category	Approval Authority <sup>1</sup>
Test Package Amendment	1. Change in risk level 2. New test plan 3. Major <sup>2</sup> test plan change with changes to safety planning <sup>3</sup> 4. Unusual Event with changes 1, 2 or 3	Low Risk – 412OG/CC <sup>4</sup> Med Risk – 412TW/CC High Risk – AFTC/CC
	5. Major <sup>2</sup> test plan change with no changes to safety planning 6. Change to safety planning 7. Unusual Event with changes 5 or 6	Low/Med Risk – 412OG/CC <sup>4</sup> High Risk – 412TW/CC
	8. Unusual Event with no planning changes	All Risk Levels – 412OG/CC <sup>4</sup>
Memorandum Amendment	Minor <sup>2</sup> test plan change with no changes to safety planning	Test Unit Commander
E-mail Amendment	Continuation or Closure	412TW/SET
Administrative Change	Administrative	UTSO
<sup>1</sup> 412TW/SET may advocate the use of a different documentation method or approval authority on a case by case basis. As such, test team will verify that their documentation type and approval authority is appropriate.		
<sup>2</sup> Major and minor test plan changes are defined in EDWARDSAFBI 99-101.		
<sup>3</sup> The subsequent approval of deferred test points will be treated as a major test plan change.		
<sup>4</sup> Or low risk approval authorities as defined in 6.3.1.1.		

**A9.2. (EDWARDSAFB) Summary of Changes.** The first page of the safety annex will provide a summary of changes since the original safety package was approved. Every amendment should be accounted for in this summary. For amendments such as memorandum amendments or continuation amendments that do not make any other changes to the safety plan, this page alone can be updated and/or replaced without reprinting the rest of the document.

**A9.3. (EDWARDSAFB) Test Package Amendments.** All changes using this method will be approved using an AFTC Form 5001 and planning will contain all the same information as an



initial test package. See Table A2.2 for the test package amendment layout and Attachment 2 for further information.

A9.3.1. **(EDWARDSAFB)** Front Matter. AFTC Form 5001, Coordination Comments and Final Safety Review Memorandum will be completed in accordance with the guidance for the original package, allowing for new signatures. Any previous coordination comments that were directive in nature and not incorporated into the safety plan should be carried over onto the new Coordination Comments page. The amendment number will be assigned by 412 TW/SET in their response to the FSR request.

A9.3.2. **(EDWARDSAFB)** Safety Plan. Changes in the amendment should be made directly to the electronic document and saved as a new file. Changes will be identified by switching the color of the text to RED and adding a footnote or endnote to that paragraph, line, or section as appropriate. The footnote or endnote will reference the amendment number of that change. If a safety package has multiple amendments, it is possible a line or paragraph may have more than one footnote indicating that it was changed more than once in the course of the test program. The RED text color should only be used for current changes that are pending approval. All previous changes will be converted back to standard BLACK text. Previously approved deletions (e.g., strikethrough text) may be removed in subsequent amendments.

A9.3.3. **(EDWARDSAFB)** AFTC Form 5000 (THAs). Any additional THAs will be added to the safety annex. Changes to existing THAs will be made to the most current version in the same manner as outlined in paragraph A9.3.2.

A9.3.4. **(EDWARDSAFB)** New Test Plan. Projects may seek approval of a new test plan using a test package amendment. This change should be used when the new test plan is sufficiently similar in scope and/or test methodology to the original test plan. Even if there are no changes to safety planning, a test package amendment is still required. All prerequisite technical reviews must be completed and a letter affirming technical adequacy of the test obtained prior to performing a safety review.

A9.3.5. **(EDWARDSAFB)** Major Test Plan Change. A major test plan change is defined IAW EDWARDSAFBI 99-101. Generally, substantial changes to test objectives, technical approach or test procedures will require a test package amendment. Individuals performing the final safety review should be the same as those from the original package, if available. For multi-discipline test plans, only the discipline(s) affected by the amendment need to be included for review along with an operations representative.

A9.3.6. **(EDWARDSAFB)** Change to Safety Planning. Any change to content in the safety plan is considered a change to safety planning. The desired changes could be more restrictive or less restrictive than the approved safety planning. Additionally, minor test plan changes that require corresponding changes to safety planning fall within this category.

A9.3.7. **(EDWARDSAFB)** Unusual Event. This test package amendment is intended to describe the occurrence of an unusual event, summarize the cause(s) as they are understood by either analysis or hypothesis and identify the test team's intended path for the resumption of testing.

A9.3.7.1. **(EDWARDSAFB)** If time is critical (typically interpreted as less than 24 hours), test teams may expedite the coordination phase by obtaining the signatures of 412

TW/SE and the approval authority only. However, verbal or E-mail confirmation from the remaining signatories in Sections II and III must be provided to 412 TW/SET prior to approval. 412 TW/SET will sign for those signatories with the following: *verbal* (or) *E-mail*, 412 TW/SET.

A9.3.7.2. **(EDWARDSAFB)** The 412 OG/CC or appropriate group commander will be the "Unusual Event" approval authority for all risk levels when there are no associated planning changes required. If changes to test or safety planning are identified, the approval authority will be identified per the amendment risk level in Table A9.1.

**A9.4. (EDWARDSAFB) Memorandum Amendments.** A minor test plan change (IAW EDWARDSAFBI 99-101) that does not change safety planning may be documented on a memorandum amendment. Examples include changing the flight conditions of test points, adding test points (provided the new conditions are within the approved envelope of test points) or deleting test points that are not a part of safety build-up. Instructions for completing a memorandum amendment may be found on the 412 TW/SET SharePoint site or by contacting 412 TW/SET.

A9.4.1. **(EDWARDSAFB)** The test team completes the memorandum. A clear case must be made that the change to the test plan is minor and does not affect the safety planning.

A9.4.2. **(EDWARDSAFB)** A technical review is required to confirm memorandum changes are minor (IAW EDWARDSAFBI 99-101) prior to amendment coordination. The review should be annotated in the coordination section of the memorandum.

A9.4.3. **(EDWARDSAFB)** The final safety review will be conducted by 412 TW/SET via sequential in-turn coordination of the amendment (this may be performed electronically). Concurrence by 412 TW/SET must be annotated on the memorandum prior to seeking approval.

A9.4.4. **(EDWARDSAFB)** The approval authority for the memorandum amendment will be the test unit commander (or equivalent).

A9.4.5. **(EDWARDSAFB)** After the amendment has been approved, the associated test plan, safety plan and/or Summary of Changes will be updated to reflect the MFR. The signed memorandum will be provided to 412 TW/SET for archiving. This may be achieved by routing the original hardcopy, a high quality photocopy or electronic file to 412 TW/SET. A copy of the signed memorandum will be added to Tab 1 for reference and the summary of changes page should be updated accordingly (see Attachment 2).

**A9.5. (EDWARDSAFB) Continuation and Closure Amendments.** The location of the 412 TW/SET approved amendment (continuation or closure) in the test package will be IAW Table A2.2.

A9.5.1. **(EDWARDSAFB)** Continuation. Test packages are valid for 1 year from the initial approval date or the approval date of the most recent continuation amendment up to the maximum allowable time per AFTCI 91-203. If the test team intends to test past that date, they must have an approved continuation amendment. This amendment requires the test team to document lessons learned and to review the existing safety planning and affirm it is sufficient and valid for continued testing. See Attachment 3 for further details.

A9.5.1.1. **(EDWARDSAFB)** Continuations will be coordinated via the continuation E-mail amendment only. The format for this Continuation Amendment is available on the 412 TW/SET SharePoint site or by contacting 412 TW/SET and will be used to request test package continuation.

A9.5.1.2. **(EDWARDSAFB)** 412 TW/SET may forward the continuation amendment up the chain of command for information only, dependent on the documented lessons learned.

A9.5.1.3. **(EDWARDSAFB)** A copy of the approved continuation amendment will be included in Tab 1 and the Summary of Changes will be updated accordingly.

A9.5.2. **(EDWARDSAFB)** Closure. The closure amendment is the final step in the overall test safety review process to ensure lessons learned are fully documented for application to future test programs. Once closed, no further test execution may be conducted and the test package may not be reopened. See Attachment 4 for further details.

A9.5.2.1. **(EDWARDSAFB)** The primary UTSO will maintain all closed test packages for no less than 5 years.

A9.5.2.2. **(EDWARDSAFB)** 412 TW/SET may forward the closure amendment up the chain of command for information only, dependent on the documented lessons learned.

A9.5.2.3. **(EDWARDSAFB)** A copy of the approved closure amendment will be included in Tab 1 and the Summary of Changes will be updated accordingly.

**Attachment 10 (Added-EDWARDSAFB)****SPECIAL PROCEDURES**

**A10.1. (EDWARDSAFB) General.** This attachment describes special guidance that does not exist in the previous chapters.

**A10.2. (EDWARDSAFB) Safety Planning when 412 TW is not the LDTO.**

A10.2.1. **(EDWARDSAFB) Safety Planning.** For cases not covered by paragraph 6.6, the 412 TW test safety process must be accomplished whenever 412 TW assets are at risk; however, the scope of the safety planning can be restricted to assessing the risk to 412 TW assets only. If an aircraft or test item will originate or terminate operations at the 412 TW, the overall risk of the test execution and impact to 412 TW assets should be considered. If desired, the LDTO may request a broader scope of review. Sufficient detail must be included in the package to assess the risk to 412 TW assets. The test package will include contractor or LDTO provided safety planning but will use an NRR or AFTC Form 5001 to provide information to or obtain approval from senior leadership for 412 TW participation.

A10.2.2. **(EDWARDSAFB) Technical Review.** The test plan will be reviewed to determine if it represents a reasonable use of 412 TW critical test and evaluation resources.

**A10.3. (EDWARDSAFB) Test Pilot School (TPS).**

A10.3.1. **(EDWARDSAFB) TPS** may develop a publication for an internal safety review of curriculum events where a set of clearly defined qualification criteria is established. Curriculum sorties that do not meet these criteria must use the Test Safety Review process.

A10.3.2. **(EDWARDSAFB) Student TMPs** may proceed into the final safety review with the following signatures: PSL, UTSO, and a staff advisor. Appropriate staff advisors include the TPS/DO, the TPS chief pilot for the applicable aircraft, or the staff technical advisor assigned to the TMP. Upon completion of the combined TRB/SRB meeting, the students will incorporate any changes, finish coordinating the test package with the safety reviewers, and then submit it to the TPS Technical Director and Commandant for their review and signature. The approval phase will be completed IAW Chapter 6 except coordination with 412 TW/CT is not required.

A10.3.3. **(EDWARDSAFB) Student TMP SRBs** may be held in conjunction with the TPS TRB provided the TPS staff monitor and 412 TW/SET are satisfied that the test plan is sufficiently mature for safety review prior to the combined TRB/SRB. To ensure sufficient maturity exists, the final safety review prerequisites will be completed IAW Attachment 5 and paragraph A10.3.2.

**A10.4. (EDWARDSAFB) Accelerated Tests and Test Surges.**

A10.4.1. **(EDWARDSAFB) Test programs** must be designated as either accelerated tests or test surges by the 412 TW/CC.

A10.4.2. **(EDWARDSAFB) Accelerated tests and test surges** are prioritized over other programs, but are required to comply with all documentation and review requirements specified by this instruction.

A10.4.3. **(EDWARDSAFB)** The steps of the process may be compressed in order to minimize the time required for final test approval. This is typically accomplished by combining the TRB and SRB, then conducting an approval brief to all coordinating officials simultaneously to obtain their signatures on the test package.

**A10.5. (EDWARDSAFB) Test Project Introduction (TPI).** This document can be used by other Centers to communicate proposed testing that will be performed at those Centers. Typically, there are no 412 TW assets at risk; however, the 412 TW is required to perform safety oversight and make sure the Center proposed tests are not elevated risk. 412 TW/SET shall review the TPI to verify that hazards are adequately identified and that the overall risk level is no higher than LOW. 412 TW/CT will also review the proposed testing for technical adequacy. Concurrence will be via E-mail.

**A10.6. (EDWARDSAFB) Ground Tests.** Ground testing that is not a part of a flight test plan may include, but is not limited to, tests conducted in 412 TENG, 412 EWG or 412 MXG facilities and any temporary maintenance procedure where technical data, such as technical order or contractor technical data, is not available. Any test which lies within the scope outlined in paragraph 1.6 will comply with all requirements of this instruction.

**A10.7. (EDWARDSAFB) Classified Test Packages.** Classified packages will follow the same procedures and policies established in this instruction with the following exceptions:

A10.7.1. **(EDWARDSAFB)** FSR and NRR requests will be made verbally stating that the team has a package that needs to be reviewed. The PSL will set up a time for the 412 TW/SET POC to review the request, approve reviewers and determine either SRB, electronic safety review or review the NRR.

A10.7.2. **(EDWARDSAFB)** All unclassified or classified amendments to classified packages will also be handled verbally, similar to the FSR request, and not through E-mail coordination. This includes continuation and closure amendments.

A10.7.3. **(EDWARDSAFB)** It is desirable that all test packages, including classified, receive control numbers from 412 TW/SET. However, certain packages may receive control numbers which are defined by established unit procedures. These control numbers may be internal to the unit and provided, tracked and maintained by the Primary UTSO. See paragraphs A11.5. and A11.6. for details.

**Attachment 11 (Added-EDWARDSAFB)****UNIT TEST SAFETY OFFICER RESPONSIBILITIES**

**A11.1. (EDWARDSAFB) General.** The UTSO is a key liaison between the test organization and 412 TW/SET. A solid working knowledge of AFTCI 91-203, this supplement and the Test Safety Review process is necessary to effectively influence and guide decision making during the safety planning phase. UTSOs should be experienced in test planning and conduct in order to credibly help in test hazard identification and mitigation development. Lastly, UTSOs ensure that the administration functions in the Test Safety Review process are understood and properly completed.

**A11.2. (EDWARDSAFB) UTSO Responsibilities.**

A11.2.1. **(EDWARDSAFB)** Assist test teams with preparing all safety-related documentation, including amendments from safety planning through the approval phases.

A11.2.2. **(EDWARDSAFB)** Certify safety-related documentation complies with content and format standards contained in this instruction prior to the beginning of the Final Safety Review by reviewing and signing AFTC Forms 5000 and 5001.

A11.2.3. **(EDWARDSAFB)** Conduct and track annual (as a minimum) test safety refresher training for test personnel within their units.

A11.2.4. **(EDWARDSAFB)** Disseminate test safety information to unit personnel as obtained from 412 TW/SET through continuation training and E-mail.

**A11.3. (EDWARDSAFB) Primary UTSO Responsibilities.**

A11.3.1. **(EDWARDSAFB)** Develop and maintain a Test Package Log per paragraph A11.5. Compare unit's Test Package Log against 412 TW/SET records to ensure accuracy of both records.

A11.3.2. **(EDWARDSAFB)** Develop and maintain a storage system or library for all unclassified test packages (per paragraph A11.6.) and a separate system for classified test packages.

A11.3.3. **(EDWARDSAFB)** Maintain positive control over all original test package documentation. Test teams working documents should be copies of the originals.

A11.3.4. **(EDWARDSAFB)** Provide a storage location for all approved NRRs.

A11.3.5. **(EDWARDSAFB)** For units with more than one UTSO, conduct at least one annual UTSO training session or meeting within the organization to ensure squadron test safety planning policies and processes are understood.

A11.3.6. **(EDWARDSAFB)** Maintain the UTSO Continuity Book per paragraph A11.7.

A11.3.7. **(EDWARDSAFB)** Ensure test package continuation amendments are submitted annually and closure amendments are submitted at the completion of testing per Attachments 3 and 4. Key elements in mishap prevention are the lessons learned captured in these amendments.

A11.3.8. **(EDWARDSAFB)** Collect and document technical, safety and programmatic lessons learned throughout the test program.

**A11.4. (EDWARDSAFB) UTSO Qualification and Designation.** UTSO qualification and designation requires the following.

**A11.4.1. (EDWARDSAFB) UTSO Qualification Requirements.**

A11.4.1.1. **(EDWARDSAFB)** Completion of a 412 TW/SET Initial Safety Training Course.

A11.4.1.2. **(EDWARDSAFB)** A minimum of 24 months AFTC flight test experience. The USAF TPS course and graduation fulfills the initial safety training requirement and 12 months of test experience.

A11.4.1.3. **(EDWARDSAFB)** Prepared (signed as PSL on) at least two 412 TW test packages.

A11.4.1.4. **(EDWARDSAFB)** Participated in or monitored at least one SRB.

A11.4.1.5. **(EDWARDSAFB)** Individual(s) not meeting all of the above requirements must receive 412 TW Chief of Test Safety qualification concurrence prior to UTSO designation.

**A11.4.2. (EDWARDSAFB) Designating UTSOs.**

A11.4.2.1. **(EDWARDSAFB)** Designation of UTSOs will be documented in writing by the test unit commander, deputy director, chief engineer or director of operations.

A11.4.2.2. **(EDWARDSAFB)** For organizations desiring more than just a primary and alternate UTSO, coordinate with 412 TW/SET on the appropriate number of UTSOs to meet unit requirements. In order to provide good continuity and consistency of test packages, the total number of UTSOs in a single unit should be minimized.

**A11.5. (EDWARDSAFB) Test Package Log.** Each test unit using this instruction will develop and maintain a Test Package Log for tracking the status and location of each unclassified test package and a separate classified Test Package Log for tests conducted within their organization. The log should be located in the front of the UTSO Continuity Book per paragraph A11.7 (as well as a copy in the Test Package Library). As a minimum, the log will include the following information:

A11.5.1. **(EDWARDSAFB)** Test package control number and title.

A11.5.2. **(EDWARDSAFB)** Indication of test package status - OPEN or CLOSED.

A11.5.3. **(EDWARDSAFB)** List of all amendments (in order) for each test package control number. This may be consolidated to just a total number of amendments for closed test package control numbers.

A11.5.4. **(EDWARDSAFB)** Discrepancies with 412 TW/SET database and the planned resolutions.

A11.5.5. **(EDWARDSAFB)** Physical or electronic location of each test package.

**A11.6. (EDWARDSAFB) Test Package Library.** The Primary UTSO is responsible for developing and maintaining a storage system or library for all test packages.

A11.6.1. **(EDWARDSAFB)** Each test unit will develop and maintain a storage area or library for all unclassified test packages for tests conducted within their organization. A

separate, classified test package library will be maintained in an appropriate secure location. Maintaining physical copies of these source documents is necessary in case of an incident or accident. During coordination of subsequent amendments, the original test package may be signed out from the library, but its location during coordination should be monitored to prevent loss.

A11.6.2. **(EDWARDSAFB)** An electronic storage system is permissible if the following conditions are met. The system must include the entire final version of each test package (to include signatures, coordination comments, etc.), all documentation in each tab (TRM, test plan, etc.), must be legible and available and the storage media must comply with electronic records management requirements.

A11.6.3. **(EDWARDSAFB)** Closed test packages must be stored in the test unit for a minimum of five years; however, they may be stored in a separate location from the open test packages.

**A11.7. (EDWARDSAFB) UTSO Continuity Book.** The Primary UTSO is responsible for developing and maintaining an UTSO Continuity Book to ensure their organization's unique test safety information is available for reference by test unit personnel. The continuity book may be electronic or paper; however, electronic continuity books must allow read access by all required unit personnel. In addition, all UTSOs must have the electronic continuity book bookmarked for easy access. The electronic or paper continuity book must contain the following:

A11.7.1. **(EDWARDSAFB)** Test Package Log, per paragraph A11.5.

A11.7.2. **(EDWARDSAFB)** NRR tracking log.

A11.7.3. **(EDWARDSAFB)** UTSO appointment letters for the previous two years.

A11.7.4. **(EDWARDSAFB)** UTSO/PSL currency log.

A11.7.5. **(EDWARDSAFB)** Log of unit test safety training events including a list of topics covered and attendance list.

A11.7.6. **(EDWARDSAFB)** Confirmation that all UTSOs have access to the 412 TW/SET SharePoint site.

A11.7.7. **(EDWARDSAFB)** Read file for all UTSOs that include 412 TW/SET E-mails, applicable test unit lessons learned and other correspondence, training or reference material.

A11.7.8. **(EDWARDSAFB)** Internal UTSO training or meeting minutes (if applicable).

A11.7.9. **(EDWARDSAFB)** Publications:

A11.7.9.1. **(EDWARDSAFB)** AFTCI 91-203 and Edwards AFB Supplement

A11.7.9.2. **(EDWARDSAFB)** AFI 91-202, AFMC Sup 1

A11.7.9.3. **(EDWARDSAFB)** EDWARDSAFBI 99-101

A11.7.9.4. **(EDWARDSAFB)** EDWARDSAFBI 99-105

A11.7.9.5. **(EDWARDSAFB)** EDWARDSAFBI 99-106

A11.7.9.6. **(EDWARDSAFB)** AFMCPD 99-1, *Test Evaluation Risk Management*

A11.7.9.7. **(EDWARDSAFB)** AFI 91-204, *Safety Investigations and Reports*



A11.7.10. **(EDWARDSAFB)** General Correspondence and Reference Material.

A11.7.10.1. **(EDWARDSAFB)** Last inspection results memorandum.

A11.7.10.2. **(EDWARDSAFB)** Safety Annex, Quality Review Checklist (available at the 412 TW/SET SharePoint site).

**A11.8. (EDWARDSAFB) UTSO Program Inspections.** 412 TW/SET will conduct annual inspections of each 412 TW test unit's UTSO program. Areas for evaluation include:

A11.8.1. **(EDWARDSAFB)** UTSO Continuity Book.

A11.8.2. **(EDWARDSAFB)** Test Package Log.

A11.8.3. **(EDWARDSAFB)** Test Package Library.

A11.8.4. **(EDWARDSAFB)** Periodic maintenance of test packages throughout the year.

A11.8.4.1. **(EDWARDSAFB)** Ensure all test packages have current continuation amendments.

A11.8.4.2. **(EDWARDSAFB)** Ensure resolution of 412 TW/SET database discrepancies.

A11.8.4.3. **(EDWARDSAFB)** All unneeded test packages are closed.

A11.8.4.4. **(EDWARDSAFB)** Compare Unit Test Package Log to the 412 TW/SET produced log to ensure accuracy of both set of records.

A11.8.5. **(EDWARDSAFB)** NRR library.